FEBRUARY 1951

ARMY INFORMATION DIGEST

Crusading for Peace
The Honorable Karl R. Bendetsen

Mobilization Plans for Industry

Signal Problems in the Far East

Dressed for Survival

Canada Faces the Arctic Challenge

What Has Been Done With the Money?

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MOBILITY OF THE SOVIET SOLDIER

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ARMY
INFORMATION
DIGEST

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MOBILIZATION MEASURES

In declaring a state of national emergency the President, on 16 December, summoned "our farmers, our workers in industry and our businessmen to make a mighty production effort to meet the defense requirements of the Nation." Today's accelerated production drive is made possible by the industrial mobilization plans which had been prepared by Department of Defense agencies. These plans, together with a summary of emergency powers revived by the President's declaration, appear in this issue.

ARCTIC SURVIVAL

Rigorous as it has been, the winter weather which sent the mercury plummeting to uncomfortable lows from New England to Korea provided only a passing introduction to the everyday problems of survival in the sub-Arctic regions. Some aspects of life in the Far North are described in three articles starting on page 43.

THE COST OF DEFENSE

In an article entitled "What Has Been Done With the Money?" the Comptroller of the Army reviews the numerous and varied projects for which the Army must stretch its funds.

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THE HONORABLE KARL R. BENDETSEN
ASSISTANT SECRETARY OF THE ARMY

CRUSADING FOR PEACE

By

THE HONORABLE KARL R. BENDETSEN

Assistant Secretary of the Army

OUR high hopes to achieve the objective of the United Nations resolution in restoring law and order in Korea have been temporarily thwarted by the intervention of other Communist forces from the North. Today the bulk of our Nation's military strength is committed in this far corner of the world, tied down for the winter and perhaps for many months to come to prevent the Red flood from engulfing that free and defenseless people.

Even as the consequences of naked Communist aggression are being considered by our Nation's planners, the free world is faced with other threats, other unprovoked acts of Communist aggression designed to enslave the peoples of other free and defenseless countries in the world. By their every act, the Communist masters have clearly proclaimed their commitment to an inexorable program of world domination which aims at the destruction of the freedoms and liberties which lie at the very roots of our way of life.

Our Government is more immediately responsive to public opinion than any government the world has known. Our national policy is made on the street corner, in the village Rotary Club, around the pot-belly stove of the country general store and in the assembly of public-minded leaders of free enterprise. This is why each of us has a keen responsibility to himself, his business and his family, to study and understand our country's international as well as her domestic problems and to search his soul for solutions to them. For we are confronted as a people today with the most serious problem of our age—survival in the face of Communist imperialism.

The threats of militarist domination of Eurasia and thence of the Western Hemisphere, in 1918 and again in 1945, were met

and overcome by the Western democracies with the help of the Russian people—first under the Tsars and then under the Politburo. After the first war Russia, torn by the Communist revolution of 1917, gained little. After World War II the consolidated police state of the Soviets gained much. In the fluid, chaotic conditions which obtained in Eurasia, and which they have done all in their power to perpetuate, Communist pressure groups backed by the Red Army have rushed in to fill the vacua of the war's aftermath. Pursuing with aggressive purpose their centuries-old heritage of territorial aggrandizement, the forces of Soviet Russia have pressed ever outward to the rimlands of their continental land mass. Bessarabia, parts of four Baltic countries, a great slab of Poland, Roumania, Bulgaria, Czechoslovakia, China and now northern Indo-China and eastern Tibet progressively have been brought under their strategic and political domination.

The Soviet Union entered World War II a country of 175 million people. Today, ten years later, the Soviet leviathan controls the destinies of 600 millions, more than a third of the peoples of Eurasia. And with ever-increasing pressure on the French in Viet-Nam and through the mountains of Central Asia, direct land routes are being opened to Indonesia, Malaya, Siam, Burma and to the heart of Mother India itself. In Western Europe, the threat is even more ominous, the methods more subtle, the military strength more concentrated.

This geopolitical menace is motivated by Soviet imperialism. Its determination is inspired by a fanaticism difficult for free peoples to understand. Its knowledge of the world outside its self-imposed curtain of censorship is strained through a filter of Communist doctrine—a doctrine dedicated to the proposition of world revolution and the destruction of "degenerate" capitalism.

Twentieth century Communism is not the philanthropic philosophy of common ownership—from each according to his ability, to each according to his need. Soviet Communism derives from Marxism, it is true, but it also derives from Peter the Great, from the whole long line of Tsars, from an heritage of despotism and political tyranny. Above all, it is a system of dictatorship depending for its very existence on police state methods incompatible with individual liberty and the dignity of man.

By their words and deeds the disciples of this doctrine have given us clear and unmistakable notice of their intention to

secure political domination of the Eurasian-African land mass and then of the Western Hemisphere. Theirs is an unhurried but diabolically consistent program advancing inexorably on two fronts. The covert program of political corruption of foreign governments through the Cominform proceeds hand in hand with the overt program of military aggression by puppet forces of their satellites backed by the unprecedented peacetime power of the Red Army. This, then, is the threat.

To recognize the seriousness of this threat in all of its implications is only common sense. Let us not permit Communism, like Nazism, to create an image of invincibility in the eyes of the world. While it is true that the threat is formidable, it is formidable only because there exist, between the East and the West, two wide gaps—a gap in land-power and a gap in lead-time.

The Soviets have an enormous land army in being with very substantial satellite forces deployed around the perimeter of their land-mass. The Western powers are weak militarily by comparison. This is the land-power gap. The Soviets have directed their economic potential to war production and have their plant production rates established on a firm gun-per-day, tank-per-week basis. The Western powers destroyed their arms production capacity in 1945 through precipitate demobilization and wholesale reconversion so that today, except for aircraft, we have few arms production lines in operation. To reestablish these requires many months. This is the lead-time gap.

With two such wide power gaps in their favor, why have the Communists not heretofore made their bid for world conquest by launching an overt and full-scale military effort to overrun Western Europe and the free world? Something has evidently deterred them.

On purely logical grounds we can, I think, assume that they would prefer to acquire the industrial assets of Western Europe intact and thus checkmate our own industrial power. Why should they then risk its destruction through too impetuous military action? Their program of covert aggression is doing all right. They have bought quite a lot of the world's real estate, and rather cheaply, by covert means. They are masters at the art of subversion and corruption of weaker governments. By comparison, the Nazis were rank amateurs in this field.

But let us not interpret this hesitancy to use all-out military force as weakness on their part. Indeed this very hesitancy has a sinister meaning. It spells stealth rather than timidity—

it reveals more vividly than any other aspect of their policy the grim self-confidence of the Politburo in its long-term program of world domination—unhurried, inexorable covert pressures bolstered by the ever-present power in being of the Red Army.

This is a very different picture than that of 1914 or of 1940 and it poses many problems for which we have no guiding precedent in history. These new problems call for original thinking, new solutions and courageous determination if we are to survive as a Nation.

Our Government has been designed by the founding fathers to be strong enough to serve the people and maintain law and order, while weak enough to be forever incapable of abridging those sacred rights of life, liberty and property which the framers of our Constitution held so dear. It is for this reason that the Government of the United States is forever incapable of itself initiating an aggressive war. This fact has very serious military implications which it would be well for us to recognize and accept at the outset. That all-important strategic factor, the "element of surprise" so vital to the military victories of Napoleon, is forever denied the United States and her allies. The principle of the initiative must therefore be yielded up by the strategic planners of the Western powers as a concomitant of the very democratic principles their strategy is designed to preserve.

Taken collectively, the Western powers have other limitations in their capacity to defend their freedoms against Communist aggression. While the Soviet nations and satellites, welded together through police state methods, are responsive politically and militarily to the will of a dozen or so master-minds in the Politburo, the Western democracies are a collection of independent national entities with centuries of national tradition and pride of sovereignty. Thus any effective defense alliance among them entails substantial yielding up of their individual sovereignties to a common defense authority. This is a slow and frustrating process requiring patience, statesmanship and unswerving determination on the part of those national leaders who, recognizing the validity of "*E Pluribus Unum,*" are willing to sacrifice some degree of national sovereignty to the common cause of survival. The importance of resolving these national problems in order to get on with the business of pooling our military resources in the common defense is a matter of sobering urgency.

The importance of united action with our allies is not born of altruism on our part. It is a practical accompaniment of our own national survival. For, of the more than two billion inhabitants in the world today, less than one-seventh reside in the Western Hemisphere. Were we to stand idly by and permit the Politburo to extend its political regimentation and police state control over the Eurasian-African land mass, we should be outnumbered six to one, manpower-wise. And with only 40 per cent of the world's industrial potential, we should be faced with the remaining 60 per cent arrayed against us. The political, economic and psychological pressures which could be exerted individually and collectively against Canada, the United States and the Latin American republics by such formidable power as the Politburo would then possess, would pose a strategic problem to which no American strategist has, to my knowledge, found a solution. Such conditions once permitted to come into being, would in effect spell Armageddon and the end of Christian civilization as we know it. These are the highlights on the debit side of our ledger.

What, then, are our capabilities? They are in truth enormous. Most importantly, we stand for a cause that is just. The moral issue is clearly drawn—the freedom of the individual as opposed to the political tyranny and human slavery of the police state. The moral justice of our cause is something far more significant than mere complacency in our own self-righteousness, for we face the stark reality that we are, in fact today, engaged in a war for men's minds. In this great ideological sales campaign, we have the superior product. In the liberation of the Philippines, in the Marshall Plan and the ECA, in the President's Point Four Program for underdeveloped areas and in our support of the United Nations resolution to restore law and order to the Republic of Korea, we have demonstrated our case in the eyes of the world.

We have no territorial ambitions. We are inspired by no motives of imperialist expansion. We have no design to enslave the peoples of weaker nations. The United States today represents the living proof that peace, prosperity and plenty are attainable in human society more readily in a political climate of human freedom, individual initiative and private enterprise than in a regimented economy. The facts support our philosophy. We have something to sell.

On the material side of our capabilities we have the largest concentration of industrial potential on this continent that the

world has ever known. In a national emergency, our economy is capable of explosive expansion as we demonstrated even to our own awe and amazement in World War II. In our enormous industrial complex, in our far-flung transportation network, in the production know-how of our incomparably free people and in our economy of peace and plenty lie the material elements of our strength for survival. Any strategy we design, therefore, must not undermine these material assets but, on the contrary, must be so drafted as to increase our material wealth and production while at the same time providing the means to defend it.

Our course of action, it should be abundantly clear, can be neither one of watching and waiting nor indeed one of limited, short-term preparedness. The inexorable and subtle pressures of Soviet Russia—calculated, unhurried and confident of the successful outcome of their program of world domination—can be met only by an equally long-term concept of our own program for survival.

One clear conclusion as to our course of action stands out above all others. It is this: We cannot survive by military force alone! Military strength in being can at best provide only a cover for the development of more effective means of waging peace. Without the deterrent to Soviet aggression which a respectable armed force alone can provide, we may never have a chance to employ these other means to win the peace. If we fail to close the land-power gap, our best efforts to close the lead-time gap may well be in vain. Our concept must thus be two-fold—ready military strength to deter aggression and to buy time together with an affirmative, coordinated political, economic and psycho-social program to win the war for men's minds.

Although no American can divine the intricacies and timing of the plans which the Communist masters have devised for our destruction, we can arrive at certain obvious conclusions as to their intent and design. High among their immediate objectives must be that of increasing their control over the world's economy and industrial potential. Outside of continental United States itself, the greatest concentration of industrial potential in the world is in Western Europe. If the Communists can secure control of the Western European economy without causing its destruction in the process they will have gained years of time. Therefore, to secure Western Europe intact, we can, I think, axiomatically assume to be their intent.

Were we, in collaboration with the free nations of Western Europe, to develop sufficient military potential in being in those areas as to convince the Communists, beyond a reasonable doubt, of our intention and determination to fight for every square foot of territory, their military invasion of these countries might never be launched. Were they convinced that the only reward in what, to them, would be a difficult and expensive campaign, would be only the smoking remnants of Western Europe—a scorched earth of impoverished peoples and dislocated economies—it seems extremely doubtful whether these practical realists of the Politburo would consider such an effort would give them this essential objective. Indeed their record has been consistently to probe for and exploit weakness, not to challenge situations of strength. This, then, presents our great opportunity to thwart such a design. For to prevent the invasion of Western Europe under this hypothesis is completely and definitely within our means and those of our allies.

The problem of the American strategist today and of his colleagues among the nations of the North Atlantic Treaty Organization is to mobilize for peace—to provide so respectable a military posture as to bring about conditions of lasting peace by means short of war. This, then, is our course of action as a Nation—the single course of action which holds reasonable promise of survival without the tragic consequences of an incomparably devastating global war from which no nation could emerge the victor. Our course of action must be not a program of preventive war but a program preventive of war, a program of peace through strength—a crusade for peace.

Unfortunately there is no evidence that would justify a conclusion that the Communist leaders will willingly abandon their program of world domination in the foreseeable future. We are thus committed to a program of military strength for the indefinite future and this poses the unprecedented problem with which our planners today are confronted. We must so design our plans for the expansion of our own Armed Forces and for the support of the military establishments of the free nations as to provide positive assurance that our civil economy can and will support and maintain these forces without material reduction, for the indefinite future—for as long as our way of life continues to be threatened.

The solution to this problem is two-fold. First, we must narrow the land-power gap by building an active force in being—well-armed, well-equipped, well-trained; a strategic

striking force or, if you will, a ready police force able to counter satellite threats and to preserve law and order under the United Nations. Secondly, we must narrow the lead-time gap by developing a strong and increasing mobilization potential capable of explosive expansion in the awful event that global war should be thrust upon us.

While we can scarcely hope for a revolution of policy in the minds of the Politburo, we can and assuredly must strive for an evolution which could ultimately cause the stalemate—if not the complete abandonment—of their program of world domination. Only by convincing them beyond a reasonable doubt that they stand to lose more than they can gain can we hope ultimately to deter them from their inexorable purpose. Only by confronting the Communist menace by situations of strength in the free world can we hope to halt the march of tyranny. Only by proving to them and the free world that the American brand of democracy thrives on threats, that our system of free enterprise is strengthened, not weakened, by military demands and that our productive capacity can and will rise to the test, can we attain lasting world peace.

AID

ON MOBILIZING MEN AND INDUSTRY

We must be very careful always to keep in focus the fact that general mobilization does not mean solely the calling of millions of men to uniform and marching them off to training camps. It is not as simple as that.

A general mobilization for modern war requires a careful synchronization of producing equipment and training men. It actually requires much more time to make the weapons of a fighting man than it does to train him, and if we should ill-advisedly call men out before industry can convert from a peacetime to a wartime economy, we would hamper the very conversion we are trying to attain and consequently slow up the production of military equipment. I can assure you that there are few factors more detrimental to troop morale than to be in uniform with insufficient equipment.

General J. Lawton Collins, Chief of Staff, United States Army

A Staff Article

MOBILIZATION PLANS FOR INDUSTRY

With the President's proclamation of a national emergency on 16 December 1950, the emphasis in the field of military industrial planning has shifted from mobilization preparedness for the future to actual present production expediting. This article explains the program for industrial mobilization upon which expanded defense production is based.

WHEN the Korean crisis sent the needs of the Defense Establishment skyrocketing overnight, the industrial power of the United States was called upon to provide tanks, ships, planes, new rocket launchers, recoilless heavy weapons, electronic equipment, clothing, medical supplies and thousands of other items of military equipment. Orders went out to American industry. Plants previously alerted had blueprints ready. Today, with assembly lines being changed over and necessary machine tools being made available from our industrial reserve, the Nation's capacity for production of military equipment is being stepped up.

This conversion to defense production is no overnight production miracle. It is the result of nearly four years of extensive planning. That planning in turn is based on lessons learned from two World Wars and the awareness on the part of the Department of Defense that this country will never again have the time granted in 1918 and again in 1942 to turn the whirring wheels of peace over to defense production.

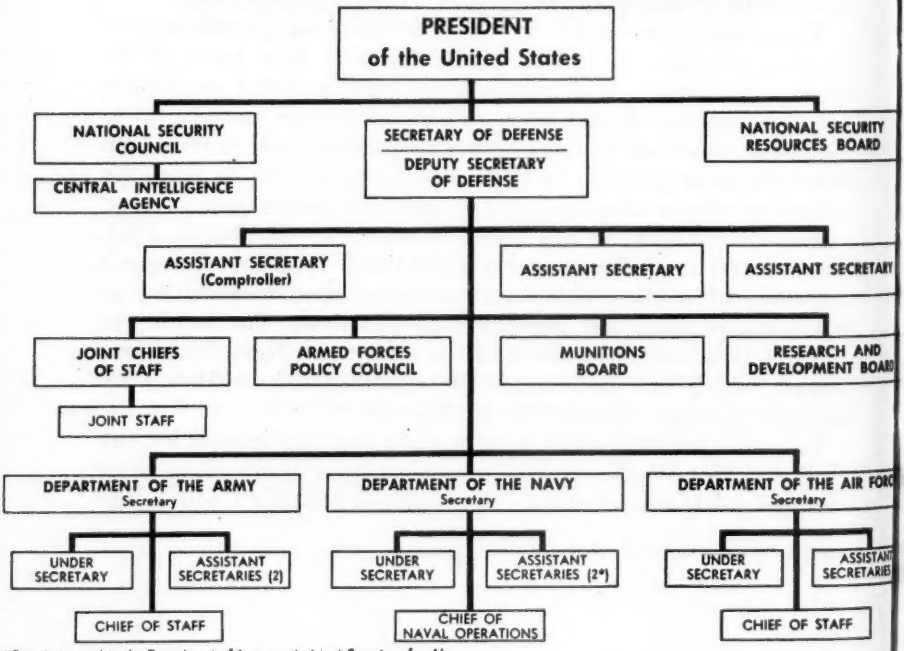
Just four days after the Japanese surrender in August 1945, the Secretaries of War and Navy obtained President Truman's approval of a joint agreement directing the "formulation of plans and policies" for industrial mobilization. The result was the practical reestablishment of the Army and Navy Munitions Board, which had been originally established in 1922 but remained dormant during World War II.

Planning for industrial mobilization was accelerated by the National Security Act of 1947 which set up a group of agencies charged solely with defense—the National Security Council, the

Central Intelligence Agency, the National Security Resources Board and the Department of Defense. A major responsibility of this team is to develop the program for economic mobilization, which in turn includes an industrial mobilization program. Under this set-up, the Munitions Board was newly constituted as an agency of the Department of Defense to replace the old Army and Navy Munitions Board. The Munitions Board and the National Security Resources Board (NSRB) are most directly concerned with industrial mobilization. (See Chart 1.)

The NSRB is concerned with national policies, programs and methods to meet wartime deficits in such specific resources as materials, manpower and transportation; it also is responsible for development of controls, censorship, war information and civilian defense. The Munitions Board is responsible for "the coordination of military, industrial and civilian mobilization." By midyear of 1950 both the NSRB and the Department of Defense had a broad overall plan well developed and both were well on the way to filling in all of the thousands of ramifications and details to complete the Nation's industrial mobilization program. The task was not yet completed when the Korean crisis broke.

ORGANIZATION FOR NATIONAL SECURITY



*One designated in the Department of Navy as Assistant Secretary for Air.

Chart 1

However disconcerting the demands of the Korean crisis may be, they still provide a chance to evaluate the entire plan, to make changes if needed, to speed up where and as needed. If anything, the Korean outbreak has demonstrated the definitive necessity for just such a plan as a preliminary to all-out mobilization when the need arises. Thus, when the Defense Production Act of 1950 (Public Law 744—81st Congress) called for stepping up the arms program, the preliminary planning—although by no means complete in scope—had progressed sufficiently so that industrial plants could anticipate their requirements for accomplishing the increases.

Within the Department of Defense, industrial mobilization planning responsibility rests with the Departments of the Army, Navy and Air Force under the general policy supervision of the Munitions Board. The Board's responsibilities are broadly stated. It coordinates among the three military Departments all industrial matters, including procurement and production activities. It plans the military aspects of industrial mobilization, including allocation of requirements. It coordinates current procurement policies, procedures and responsibilities. The Board determines the industrial feasibility of strategic plans prepared by the Joint Chiefs of Staff. It assigns relative production priorities for military purchasing programs and it develops basic policies for the most effective and economical use of facilities and services. It supervises the national stockpile of strategic and critical materials as well as the maintenance of reserves of industrial plants and equipment. In addition its duties cover a vast range of logistic projects.

In short, Munitions Board planning is designed to prepare the ground work in peacetime for maximum industrial support of the Armed Forces in time of war.

INDUSTRIAL MOBILIZATION PROGRAM

Industrial mobilization planning logically begins with a determination of military supply requirements under mobilization conditions. These requirements, in turn, depend on the basic concept of strategy and the master plans for defense as prepared by the Joint Chiefs of Staff. The latter transmit their completed plans to the three military Services—Army, Navy and Air Force. Each service calculates its needs, how long it will take to produce war materiel ranging from shoes to ships, from side arms to huge armaments, from gasoline to planes.

All of the munitions of war are broken down by the Departments into the basic raw materials required to produce them.

Thirteen categories of requirements are considered: manpower, materials, components, construction, equipment and supplies, communication facilities, transportation services, petroleum products, water supply, production equipment, electric power, gas, coal and coke. A *Requirements Manual* issued by the Munitions Board guides the three services in compiling and preparing their mobilization requirements on a uniform basis. The Munitions Board then screens, coordinates and integrates this data into a plan for overall Department of Defense requirements. After this is accomplished, the industrial preparedness planners are able to place production orders with industry—orders geared to the actual needs of all the services.

Realizing that without a system of priorities and allocations, shortages of men and materials would result, the Munitions Board early drew up plans for such a system. Soon after the Korean outbreak, the Congress enacted the Defense Production Act of 1950 which creates the legal basis for establishment of priorities and allocations. Under terms of this Act the newly established National Production Authority has authorized the use of DO (Defense Order) priorities which can be applied to procurement contracts for current defense needs. Defense orders would have first call on scarce materials such as steel, copper and aluminum, thus limiting the volume of production of certain durable consumer goods which compete with defense production for raw materials.

ELEMENTS OF INDUSTRIAL MOBILIZATION

The entire industrial mobilization program of the Department of Defense is grouped in two major categories: (1) *The Mobilization Elements* are programs which will achieve full effect only in event of war. (2) *The Supply Management Elements* are peacetime programs which can be carried into war for greatest efficiency in all fields of supply operation. The latter elements are put into effect as rapidly as they are evolved. (See Chart 2, page 18)

The Mobilization Elements comprise five principal factors of production—(1) industrial plants, (2) equipment, (3) materials, (4) manpower and (5) services. The programs and procedures applicable in each of these areas include:

Industrial Plants

Plant Reserve Program: The Department of Defense industrial plant reserve now consists of those World War II plants for which there was little peacetime use such as shipyards, ex-

plosive manufacturing and aircraft plants. As of 31 May 1950 a total of 454 manufacturing plants and other war facilities were being retained in reserve. Of these, 260 are in the Departmental Industrial Reserve under the direct control of the military Departments, including 54 arsenals, shipyards and similar permanent military installations. The other 194 are in the National Industrial Reserve which includes plants that have been or may be sold or leased, subject to the National Security Clause written by the military Departments or by the War Assets Administration stipulating that such plants will be kept in condition to begin their planned war production within 120 days. All together, 430 are manufacturing plants, 16 are research facilities and eight are oil pipelines, terminals or other non-manufacturing facilities. Seventy produce basic materials for which the NSRB has assumed mobilization planning responsibility while the military Departments are responsible for the others. Of the 400 reserve plants not in the permanent military establishment, 268 have been sold or leased or are in governmental use, 27 are partly sold or leased and 105 are idle.

Production Allocations: Because main reliance will continue to be placed on the ability of American private industry to convert speedily to full war production in time of a national emergency, the entire Production Allocation Program was worked out with industry. When more than one of the three Departments is interested in any one plant's production, the Munitions Board allocates to *one* of the Departments the responsibility for coordinating all military production in that plant. This allows for development of tentative production schedules—voluntarily agreed to by industrial managements—to cover mobilization requirements; it allows contractors to select specific subcontractors and suppliers and estimate necessary materials, machine tools and other equipment and manpower needs. Thus, by advance planning, bottle-necks are being prevented. In all of this work on industrial plants, plans are also made for civilian requirements. The NSRB determines essential civilian requirements and prescribes the areas and extent of industrial capacity from which military planners are excluded, to assure production for minimum civilian requirements.

Industrial Conversion: The Industrial Prepardness Measures Program is intended to shorten the time between awarding of contracts and attainment of the highest possible wartime production rates by means of production studies in peacetime. Because most of the items considered have no commercial

counterpart, exploratory studies are being undertaken by qualified industrial concerns to determine those aspects of production in which greatest time savings may be achieved. Companies then are selected to develop the items.

Such exploratory studies constitute Phase I of this preparedness work. Following the recommendations made in these studies, some of the most important time-saving production measures are actually developed by selected industrial producers under contract with military procurement agencies. Such measures, referred to as Phase II of this program, may relate to new special-purpose machinery, to new metal-fabricating techniques or the application to production engineering of other new methods and processes. Finally, as Phase III, "educational" orders for limited quantities of the military items studied are placed with industry as a means of perfecting production techniques. The work has already paid substantial dividends in starting certain lines of munitions production for the present expansion of the Armed Forces.

Equipment

After World War II, large numbers of machine tools which had been financed by the Government were sold for use by private industry. However, the Congress authorized the military Departments to augment their reserves with machine tools capable of producing military-type end items and the General Services Administration has acquired other production equipment to augment the national industrial equipment reserve. There are now about 100,000 items of machine tools and other production equipment in the warehouses of the three military Departments. In time of emergency the industrial equipment reserve will be supplemented by the activation of "phantom" pool orders for a large number of standard type machine tools; these orders are now in the possession of the leaders of the machine tool industry throughout the Nation. "Phantom" pool orders become firm production orders when activated by letters or telegrams of intent.

Materials

Materials Survey Program: Studies by the Munitions Board provide basic information necessary to the control and operation of the National Stockpiling Program. These studies are used by both the NSRB and the Munitions Board as a basis for avoiding or at least alleviating critical material shortages. The steps taken include stockpiling, conservation, substitution and encouragement of new methods of production.

Stockpiling: The Stockpile Act of 1946 authorized accumulation of necessary strategic and critical materials. Seventy-one materials were chosen for the stockpile. Of these 52 are minerals, only eight of which are produced in this country to any great extent. Some of these raw materials are being acquired by purchases abroad while others are being built up from existing surplus in this country. A reevaluation of the program resulted in eliminating some materials from the lists, adding others and accelerating the rate of acquisition of certain materials in order to attain a proper balance. Items being stockpiled range from such industrial necessities as agar and castor oil, through the utilitarian metals such as copper, aluminum and nickel to rare and costly diamonds, rubies and sapphires. The list even includes opium for medicinal purposes.

Manpower and Services

The remaining two of the five main elements of the Department of Defense Industrial Mobilization Program—manpower and services—are matters of primary interest to the NSRB.

In the field of manpower, however, the Department of Defense works with the other Federal agencies on the problems of providing adequate manpower for the Armed Forces and for military contractors and suppliers. This includes such areas as manpower priorities, occupational deferments, wage stabilization problems, adjustment of labor disputes and methods of obtaining workers for essential production. The Munitions Board has assisted the Personnel Policy Board and other agencies in preparing a list of skills that require long training time and that are expected to be in short supply in event of war. In wartime the Army, Navy and Air Force need skills that are not common to civilian life and many persons who would be drafted will have to develop military skills that have no civilian counterpart. However, plans have been made to insure that critical skills will be used by the Armed Forces only to the extent of actual need.

The same principle holds true of services in such fields as transportation, power and communications. Preparation of the communications industry for war production began in 1948 when the Army Signal Corps approved a "contingent contract plan" suggested by the industry itself to shorten the conversion time. Under this arrangement, individual companies do the planning or actual production work for the Signal Corps, agreeing to keep their plants prepared and available for production if an emergency occurs. A Committee on Plans for Mobilizing

INDUSTRIAL MOBILIZATION PLANNING PROCESS

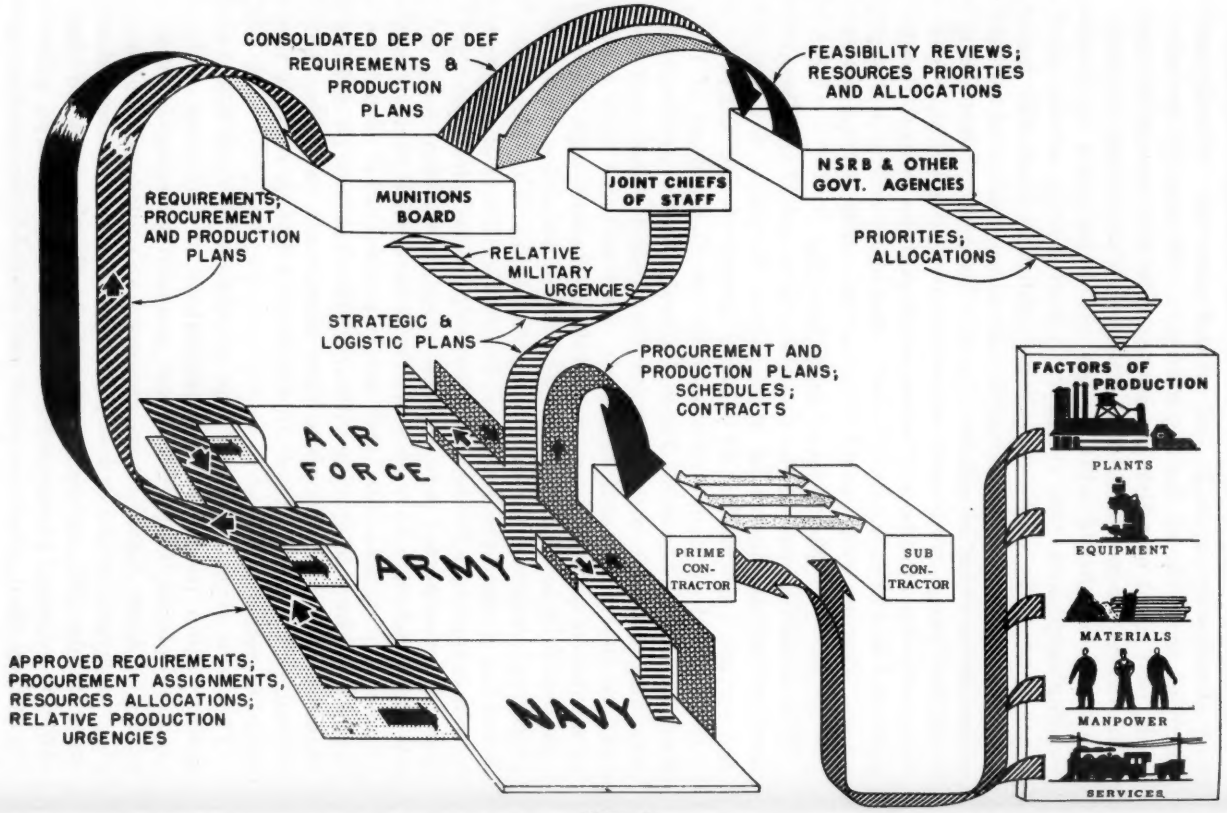


Chart 2

Science was organized in October 1948. In April 1948, the railroads began forming Transportation Corps Reserve units. Comparable Reserve organizations are being formed in telephone companies and many other service organizations from banks to construction companies. About 1200 have been formed out of a contemplated 3770.

The Munitions Board also has paid special attention to the production of aircraft, petroleum and electronic equipment. These are treated on a commodity basis because of the special military importance attached to the end items; the integrated nature of the industries involved; recognition of the high priority which they will have in drawing upon resources; and because all three Departments are so deeply concerned that it is not feasible to assign procurement responsibility to any one Department.

ELEMENTS OF SUPPLY MANAGEMENT

The second main portion of the entire program deals with the major supply management elements, designed to make any actual industrial mobilization effort more speedy, efficient and economical. These elements are intended also to save time, manpower, materials and hard cash in the peacetime operation of the Defense Establishment. In general, these programs involve standardization and uniformity of procurement and other supply matters throughout the Department of Defense.

Purchase and contract administration policies and procedures are being standardized by the Munitions Board. This program has a three-fold objective—it seeks to eliminate competition among the various Departments in their own procurement; it expedites record keeping and accounting by industries serving more than one Department; and finally it promotes an orderly, rapid transition from peacetime to wartime procurement when necessary. In this connection, contract cost and accounting principles for Government-furnished property are being unified and standard procurement procedures for each of the three services are being adopted.

Single Service Purchase Responsibility: The Munitions Board is specifically charged with making single-service purchase assignments to the greatest extent practicable. Four methods have been worked out: the single-service assignment, joint procurement, coordinated procurement (especially for aircraft) and collaborative procurement. In the first, as an example, the Army buys all food for the military Departments;

the Navy buys all hand tools and the Air Force buys all photographic equipment. Illustrating the second system are the Armed Services Petroleum Purchasing Agency and the Medical Procurement Agency, which purchase items in their fields for all three services. Under the third method, the Navy procures from one plant, the Air Force from another—so that, for example, air-frame, propeller or aircraft engine manufacturers will deal mainly with just one Department. An example of collaborative procurement is the textile purchasing offices of the Army (which also purchases for the Air Force) and Navy located together in New York City for quick and ready exchange of purchase information. Approximately 90 per cent of the dollar value of all Department of Defense purchases already have been assigned under one or another of these systems.

Standardization Program: Material standardization functions are integral to the overall program of determining needs of the three Departments by the Joint Chiefs of Staff and the Research and Development Board working with the Departments. The Munitions Board Standardization Program is primarily concerned with methods of determining the practical minimum of different types in each category of end items essential to military operation and of achieving the greatest practical interchangeability of components used in such end items. The Board also is charged with developing one common series of specifications which meet military requirements.

Cataloging Program: The Munitions Board Cataloging Program has as its aim the establishment of one system of supply cataloging to replace the 17 separate cataloging systems now employed within the Department of Defense. When the program is fully operative, items that appear in two or more catalogs will be called by the same name and have the same description and identification number. This will prevent duplicate procurement and will provide a uniform basis for inventory. The gigantic task of cataloging Armed Forces parts and equipment is about 40 per cent completed.

The Munitions Board also is concerned with establishment of uniform policies, practices and procedures of inspection and acceptance of materials and services. The defining of inspection responsibility assignments among the services is under way. The Board is also at work on a program to provide the most effective and efficient distribution, storage, handling and warehousing of materiel within the military Departments.

Price and Contracts: In time of war, the normal supply-demand market mechanism which generally regulates a peacetime economy is upset. A controlled economy usually results; but despite that, it is recognized by planners for industrial mobilization that "financial incentives necessarily continue as a contributing element in the production process." Unless these financial incentives are closely channeled and discriminately applied, the program of controls may lose its effect. With that in mind, the Munitions Board drew up a comprehensive plan based on World War II methods and practices, many of which are still in effect today. These basically call for sound initial pricing, with re-pricing of individual contracts only when absolutely necessary; incentive-type contracts in certain limited cases; cost-type contracts and measures for profit recovery by renegotiation and taxation.

Considerable thought has been given by the Department of Defense to security problems affecting industrial plants. On 1 August 1950, the Board issued *Principles of Plant Protection*, a pamphlet which deals in detail with fire and accident prevention, internal security, espionage, sabotage, defense against enemy attack (up to and including an atomic bomb burst) and methods of minimizing the effects of enemy attack by such measures as protective construction.

Taken together, these many programs comprise the Industrial Mobilization Program of the Department of Defense. In an effort to assure maximum participation by all industry—small as well as large—the Munitions Board conducts an information program. Numerous documents and guides have been issued and field purchasing centers have been established. The task of preparing plans and programs that will make industrial mobilization a smooth-working reality are continually being worked over. The entire program is flexible enough to meet changing conditions. It is geared to mesh with the overall national security program of a sound civilian economy bolstering our forces in the field with maximum production.

Unless we are ready to sacrifice and, if need be, die for the conviction that the freedom of America must be saved, it will not be saved. Only by a readiness for the same sacrifice can that freedom be preserved.

The Honorable Henry L. Stimson, former Secretary of War.

Highlights from the President's State of the Union Message

8 January 1951

The state of our Nation is in great part the state of our friends and allies throughout the world. The gun that points at them points at us also.

The threat is a total threat and the danger is a common danger. All free nations are exposed and all are in peril. Their only security lies in banding together. No one nation can find protection in a selfish search for a safe haven from the storm.

• • •

The imperialism of the tsars has been replaced by the even more ambitious, more crafty and more menacing imperialism of the rulers of the Soviet Union. This new imperialism has powerful military forces. It is keeping millions of men under arms. It has a large air force and a strong submarine force. It has complete control of the men and equipment of its satellites. It has kept its subject peoples and its economy in a state of perpetual mobilization.

The Soviet imperialists have two ways of going about their destructive work. They use the method of subversion and internal revolution and they use the method of external aggression. In preparation for either of these methods of attack, they stir up class strife and disorder. They encourage sabotage. They put out poisonous propaganda. They deliberately try to prevent economic improvement.

• • •

Our own national security is deeply involved with that of the other free nations. While they need our support, we equally need theirs. Our national security would be gravely prejudiced if the Soviet Union were to succeed in harnessing to its war machine the resources and the manpower of the free nations on the borders of its empire.

• • •

If Western Europe were to fall to Soviet Russia, it would double the Soviet supply of coal and triple the Soviet supply of steel. If the free countries of Asia and Africa should fall to Soviet Russia, we would lose the sources of many of our most vital raw materials, including uranium, which is the basis of our atomic power. And Soviet command of the manpower of the free nations of Europe and Asia would confront us with military forces which we could never hope to equal.

In such a situation the Soviet Union could impose its demands on the world without resort to conflict, simply through the preponderance of its economic and military power. The Soviet Union does not have to attack the United States to secure domination of the world. It can achieve its ends by isolating us and swallowing up all our allies. Therefore, even if we were—and I do not believe that we could be—craven enough to abandon our ideals it would be disastrous for us to withdraw from the community of free nations. We are the most powerful single member of this community and we have a special responsibility. We must take the leadership in meeting the challenge to freedom and in helping to protect the rights of independent nations.

EMERGENCY POWERS REINSTATED

WITH the President's proclamation of a state of national emergency on 16 December 1950, the following are among the principal provisions of laws pertaining to the Armed Forces which automatically became operative:

General

Joint Resolution of 11 April 1898. Permits the erection of temporary forts or fortifications "in case of emergency when in the opinion of the President, the immediate erection of any temporary fort or fortification is deemed important and urgent" without complying with formalities and procedures ordinarily followed.

Act of 2 February 1901—Section 18. Authorizes the Surgeon General to appoint as many contract surgeons as necessary "in emergencies."

Armed Services Procurement Act of 1947—Sections 2 (c) (1) and (e). Purchases and contracts for supplies and services made by the Department of the Army, the Department of the Navy, the Department of the Air Force, the United States Coast Guard, the National Advisory Committee for Aeronautics and the Central Intelligence Agency need not be made by advertising if "determined to be necessary in the public interest during the period of a national emergency declared by the President or by the Congress."

Officer Personnel Act of 1947—Section 507(b). Authorizes the President to suspend the operation of any provision of law pertaining to promotion "in time of emergency declared by the President or by the Congress, and in time of war."

Career Compensation Act of 1949—Section 402(a). For the purposes of disability retirement in the uniformed services, any disability incurred in line of duty during the serviceman's active service "in time of war or national emergency" shall be considered to be the proximate result of the performance of active duty.

Uniform Code of Military Justice—Article 71 (b). Section 5 of the Act of 5 May 1950 (not effective until 31 May 1951)

provides that the Secretary of the military Department concerned may commute a court-martial sentence of dismissal of an officer, to reduction to any enlisted grade "in time of war or national emergency."

National Defense Facilities Act of 1950—Sections 4 (c) and (e). Provides that the Secretary of Defense shall not permit property acquired under this Act to be used in any way which will interfere with its use for the administration and training of the reserve components of the Armed Forces, "or in time of war or national emergency by other units of the Armed Forces of the United States or any other use by the Federal Government." The same requirement shall apply to facilities acquired or improved by any state with funds contributed by the Secretary of Defense in accordance with Sections 3 (b) or (c) of the Act.

Army

Act of 21 November 1941. Extends the time for examination of accounts of Army disbursing officers to ninety days "in time of war or during any emergency declared by Congress or determined by the President and for a period of eighteen months after such war or emergency."

Act of 28 June 1947. Provides that the Secretary of the Army may refuse to accept resignations of enlisted men "in time of war or national emergency declared by the President or Congress."

Officer Personnel Act of 1947—Sections 503 (a), 504 (b) and 515 (b). Removes the statutory limitation on the number of Army officers above the grade of major general whenever "a national emergency is declared after 1 July 1948."

Officer Personnel Act of 1947—Section 514 (f). Permits suspension by the President of any statutory provisions prescribing mandatory retirement or separation of regular Army officers "in time of emergency declared by the President or by the Congress, and in time of war."

Officer Personnel Act of 1947—Section 515 (e). Authorizes the President to issue temporary commissions in the Army of the United States, to continue during the emergency or war in which the appointment was made and for six months thereafter, "in time of emergency declared by the President, or by the Congress and in time of war."

Navy and Marine Corps

Act of 29 August 1916. Authorizes the recall of Navy enlisted men on furlough without pay for the unexpired portion

of their enlistments to complete the enlistment period "in time of war or national emergency."

Act of 29 August 1916. Authorizes the Secretary of the Navy to call retired enlisted men into active service "in time of war or when a national emergency exists."

Act of 18 August 1941. Authorizes enlistments in the Navy or Marine Corps to be extended "in time of war, or national emergency declared by the President."

Act of 22 March 1943. Extends the jurisdiction of naval courts to certain persons outside of the United States "in time of war or national emergency." (Note: Repealed by Section 14 (s) of Public Law 506—81st Congress, effective 31 May 1951.)

Act of 8 April 1946. Regulates the rate of pay in certain circumstances of retired officers of the permanent grade or rank of rear admiral recalled to active duty "in time of war or other national emergency."

Act of 2 August 1946—Section 18. Authorizes transportation and subsistence on naval vessels at Government expense of such persons as the Secretary of the Navy may authorize "during the existence of war or national emergency as declared by the President."

Officer Personnel Act of 1947—Sections 103 (a), (b), (c) and 203 (a). Provides that limitations on the number of admirals of the line of the Navy, generals in the Marine Corps and admirals of the Staff Corps of the Navy do not apply "in time of war or national emergency declared after the effective date of this act."

Officer Personnel Act of 1947—Sections 304(6). Reinstates the authority to make temporary naval appointments prescribed under the Act of 24 July 1941 "during any future war or national emergency."

Officer Personnel Act of 1947—Sections 413 (a) and (b), 415 (a) and (b). Removes the statutory limitations on the number of Navy and Marine officers "in time of war or national emergency declared after the effective date of this Act."

Officer Personnel Act of 1947—Section 424. Removes the statutory limitation on the number of temporary commissions which the President may issue in the Navy Medical Corps "in time of war or declared national emergency."

Officer Personnel Act of 1947—Section 430. Removes the statutory limitation on the number of retired admirals who may be serving on active duty "in time of war or national

emergency declared after the date of approval of this Act."

Public Law 207—81st Congress, Section 8. Provides that commissioned or warrant officers on the retired list of the Navy or Marine Corps may be ordered to active duty "during the existence of war or of a national emergency declared by the President to exist," and such officers shall be entitled to promotion on the retired list as if such service had been rendered continuously on the active list.

Articles for the Government of the Navy, as amended—Article 65. Authorizes service on naval courts-martial by reservists "when actively serving under the Navy Department in time of war or during the existence of an emergency." (Note: Repealed by Section 14 (n) of Public Law 506—81st Congress, effective 31 May 1951.)

Coast Guard

Act of 4 August 1949. Provides that the Coast Guard Reserve may be called or continued on active duty "in time of war or national emergency declared by the President."

Public Law 207—81st Congress. Section 367 (a) (4). Authorizes the retention beyond their enlistment period of enlisted men in the Coast Guard "during a period of war or national emergency as proclaimed by the President, and, in the interest of national defense, for a period not to exceed six months after the end of the war or the termination of the emergency." This Act further provides that "in time of war or national emergency" commissioned and warrant officers of the Coast Guard on the retired list may be called to active duty.

Public Law 207—81st Congress. Section 652. Provides that any law removing "for the duration of a war or national emergency proclaimed by the President" any restriction contained in any then-existing law as applied to the Navy, shall, in the same manner and to the same extent, remove such restrictions as applied to the Coast Guard.

Public Law 207—81st Congress. Section 752. Provides that any member of the Coast Guard Reserve may be ordered to active duty, "in time of war or national emergency declared by the President to exist," for the duration of the war or until the termination of the emergency as declared by the President, and may be continued on such active duty for such duration and six months thereafter, notwithstanding that the term of appointment or enlistment may have expired.

SIGNAL PROBLEMS IN THE FAR EAST

By

MAJOR GENERAL S. B. AKIN

POSTWAR planning by the Signal Corps has met the acid test of actual combat. Our experiences in Korea indicate that our research programs, except in minor details, have anticipated the requirements of modern war. But while the equipment stood the test, it was plain during my inspection trip to the Far East that the Army did not have enough experienced technicians to maintain and operate its equipment, just as it did not have enough infantry, artillery and armor in the early stages of the battle. This is a condition peculiar to the peacetime basis upon which our Army is maintained. While regrettable, it could scarcely have been resolved in advance under our peacetime limitations.

As with other branches, it thus became a question of getting enough properly trained personnel to the right places at the right time in order to make the equipment function at top efficiency. Just as you cannot expect a rifle to do a bazooka's job, so you cannot expect a handie-talkie to do the job for which a higher-powered radio set is required. In the early stages of the campaign, troops frequently attempted to use signal equipment for transmitting messages over distances much greater than the equipment was designed to cover. Many other problems presented themselves to unskilled personnel. Mountainous terrain rendered correct "siting" of radio sets important. Many who found that their messages were not getting through were not aware that their signals were being "masked" by hill masses. Rapid movement by truck and jeep over the rough countryside often gave equipment unusually violent handling. Those troops who took special care of their delicate equipment were not afflicted seriously with abnormal

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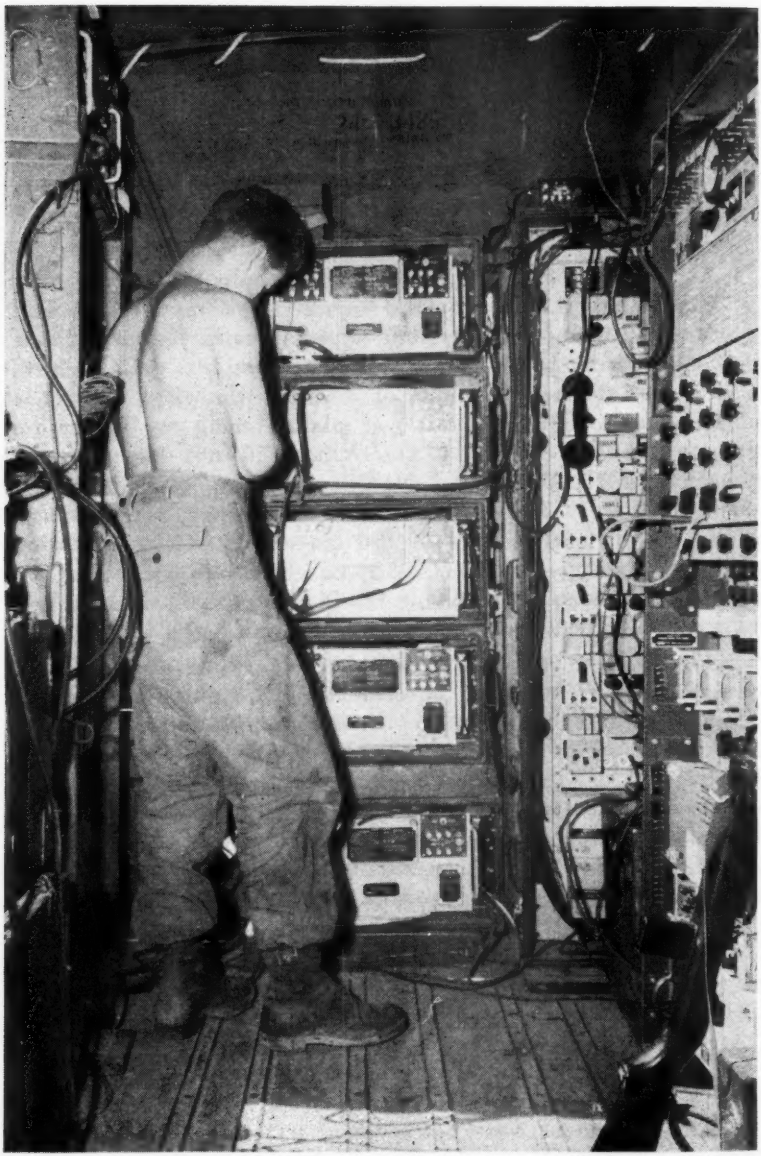


U. S. Army Photograph

His carbine at the ready, this Signalman maintains vital communications in an advanced command post carrier van somewhere in Korea.

maintenance and repair. Also our men frequently were forced to abandon equipment under the pressure of overwhelming forces. All of this had to be and was replaced—over a supply line from the United States nearly 10,000 miles long. Those were some of the problems that were faced and overcome.

As soon as news of hostilities reached us, I signaled the Far East Command, asking their needs for additional signal equipment—wire, dry batteries and all other items of supply. Shipments began immediately by the fastest possible means including airlift. By the end of September, 200,000 miles of field wire and cable had been shipped. Other items were forwarded in comparable proportions, including approximately 10,000 radio sets of all types and thousands of dry batteries. A standing operating procedure to get "the right amount to the right place at the right time" prevailed in spite of the great distances involved.

To explain field operations of the Signal Corps here, it should be understood that the Signal Corps operates communications from the Pentagon down to and including division headquarters. At brigade or regimental level and below, communications operation is the responsibility of those subordinate units. Whenever available, Signal Corps experts were sent to such units to give them the extra technical assistance that the situation required.

Within 48 hours after the invasion of Korea, the Far East Command had asked for 105 officers and enlisted specialists. They were sent immediately by airlift but it was necessary to deplete units and divisions in the United States to get them there. Since then, 299 officers and 2874 enlisted specialists have been furnished—and this does not include a very considerable number of personnel shipped as regular Signal units. After the trained technicians arrived on the scene, many of the communications problems were resolved.

Long-range, higher-powered transmission equipment was moved farther forward so that our scattered front-line elements would have equipment with adequate range. Our troops were dispersed much more widely than normally would be required had we had sufficient men. Some divisions, for example, were responsible for 40-mile fronts. As for the high mountains, trained personnel found that problem fairly easy. Signal Corps technicians erected a large number of relay stations on mountain tops as well as on valley floors. Thus signals could "cross" over these hills by projecting line-of-sight radio beams

from valley to mountain top and down to the valley again. The same feat could be accomplished by going around the mountains, using relay points at the turns. The use of fixed elevated and tilted antenna and remotely controlled radio sets proved extremely practical.

Another problem arose in the field when inexperienced personnel tried to use field wire to transmit communications over greater distances than this wire was designed to carry. Spiral four cable and related equipment or several field wires used in parallel quickly solved that one. Taking everything into consideration, signal equipment met all the tests of combat. Our communications and supply build-ups were rapid.

The backbone of our facilities for communication between Korea and the outside world was the aerial and buried cable running from Tokyo through several Japanese cities and connecting with the submarine cable to Korea. This provided landline, voice and telegraph circuits from Sasebo in Japan to Pusan in Korea. By early October, a second submarine cable had been placed in operation to Pusan. In Korea itself, there was in existence a buried cable running from Pusan through South Korea to Seoul and up through Pyongyang to Mukden, Manchuria. To augment this Mukden cable, there were limited pole line facilities paralleling the cable from Pusan to Seoul.

Before the outbreak of hostilities, the high-frequency radio line-of-sight transmission which the Signal Corps introduced in World War II (and which now is coming into wide commercial use) had been developed to a high degree by the Signal Corps in Japan. There, one of the longest radio relay systems in the world was constructed, comprising 22 relay points. It carried both voice and printed messages. Immediate steps were taken to extend this system, providing terminals and relays across the channel to Pusan and extending up through Taejon. This was followed by complete coordination of all available communication facilities of the Army, Navy and Air Force. Voice, radio, teleprinter and continuous wave (CW) circuit facilities were netted between Army elements in Japan and in the field, Navy forces afloat and Air Force installations and bases both in Japan and Korea. Thus, within a few weeks, we had some 40 landline, voice and teletypewriter circuits, 28 radio-telephone, radio-teletypewriter and CW circuits. This was considered adequate for the operations required.

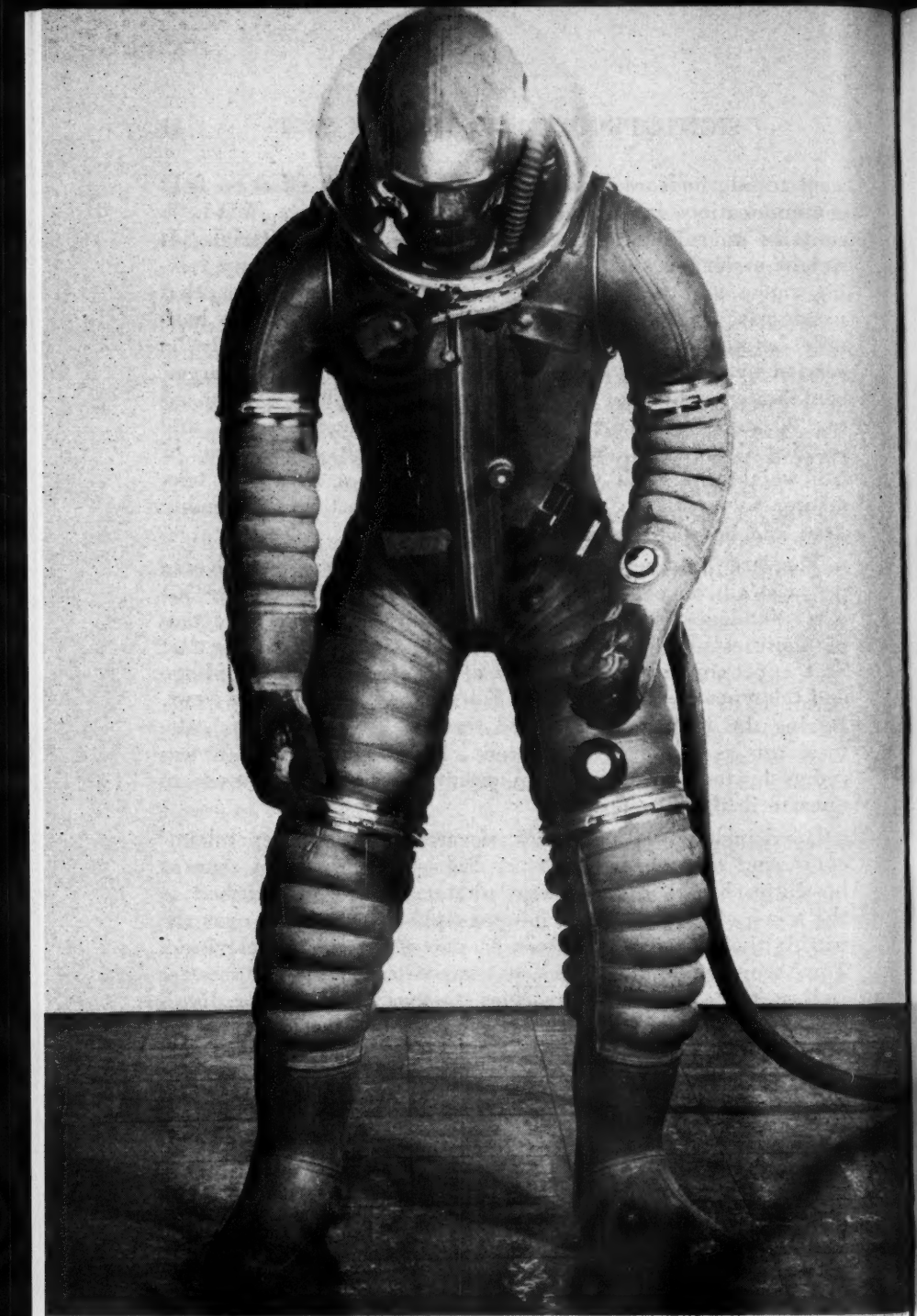
One of the developments of the Signal Corps which under-

went testing in Korea and which will have great effect on field communications in the future is our new field wire, WD-1. It contains no rubber and very few other critical materials. It weighs much less than the old types of wire, has a better talking range and has about the same tensile strength as that previously used. It is wound on payout dispensers in half-mile lengths weighing only 26 pounds. These can easily be carried by a soldier on his back, even at a run. An enlarged container permits the wire to be laid by airplane at a speed of 120 miles an hour. New and lighter handie-talkie and walkie-talkie radios, new switchboards—much smaller and of less weight but with greater capacity—and a new type teleprinter soon will be coming off the manufacturers' assembly lines and be on their way to the front.

The large number of press correspondents present in Korea put a strain on communications. At one time there were 361 correspondents requiring communications service. The extent of facilities provided by the military is indicated in the fact that approximately 50 per cent of all of our radio-telephone and teletypewriter traffic out of Korea was in the form of news. During the Inchon landing and the quick push to Seoul, the total ran as high as 70 per cent. Recently this burden was reduced when commercial communications agencies began to operate in the Theater.

Hand in hand with the task of carrying the correspondents' copy went the job of the Army Pictorial Service. As soon as hostilities began, Signal Corps photographers were rushed to the scene of action. Their photographs appeared all over the world; their movies were seen in newsreels and on television. The Army radiophoto service transmitted these pictures, as well as those of civilian agencies, to San Francisco for distribution. Copies of these Signal Corps photos are kept in our files for inspection by the public and press or for use by historical researchers and are available at cost as a public service.

From our experience in the Korean action, it is evident that when there are enough trained communications specialists available who are familiar with the capabilities of the equipment that has been supplied to them, communications are successful. New equipment that is already coming off production lines will further insure that our troops will continue to have the most modern and effective type of military signal communications which can possibly be developed.



An Air Force crew member wears the new type pressure suit which will enable him to live at altitudes up to 62,000 feet where human survival is otherwise impossible.

Pictorial Section

DRESSED FOR SURVIVAL

A FAR cry from the parade ground conception of the profession of arms are the diversified tasks of the Armed Forces specialists depicted here. Highly trained for specific, intricate, often dangerous jobs, their uniforms must be strictly functional to aid them in resisting extremes of heat, cold, altitude or depth as they perform the various tasks that are part of the increasingly complicated business of war in the air-atomic age.

This respirator permits comfortable breathing in extreme cold.

Apparel—less resplendent but more effective than the ancient knight's shining coat of mail—has been devised to provide protection for the human body when it is whisked from ground level to great heights in a matter of seconds. At the rarefied atmospheric conditions of the sub-stratosphere, the internal organs might burst if pressurized suits were not provided. At great depths under the sea, the diver's body might be crushed if he did not wear a protective suit that neutralizes the pressure of the sea. In the extremes of Arctic cold, the body also requires protection. Crash rescue personnel require suits that will withstand the searing heat of a gasoline-fed inferno.

For all of these purposes and more, Armed Forces research and development has provided clothing which may give the specialists the fantastic appearance of an artist's conception of a Man from Mars. But without these protective features, men could not operate the modern machines or face the conditions that must be endured while maintaining the Army, Navy and Air Force of today.

(All photographs in this section by Department of Defense agencies.)

This paratrooper carries his parachute, a new-type life jacket, a general purpose bag containing his equipment and a 60mm mortar. The bag, released in mid-air, drops 20 feet below him where it remains suspended, absorbing part of the shock on landing.

This member of a Navy underwater demolition team wears a one-piece waterproof rubber suit and swimming fins. Valves on head and chest allow the release of air when he is required to swim at considerable depths.

Air rescue personnel in fire fighting clothing can withstand heat of a 1500-degree fire two feet away. The suit reflects more than 99 per cent of the heat rays.

An airman wearing an alpaca winter flying suit steps from a low-pressure chamber. The suit consists of three jackets and two pairs of trousers and is adaptable to temperature variations as a plane changes altitude.

WHAT HAS BEEN DONE WITH THE MONEY?

By

LIEUTENANT GENERAL RAYMOND S. McLAIN
Comptroller of the Army

A GOOD question—for without doubt it is the inalienable right of every citizen, be he military or civilian, to ask what his Government does with the money he contributes through taxes. That is a fundamental concept of democracy. In these days when new billions of dollars are being appropriated to augment the billions which have been made available in past years for operating expenses of a peacetime Army, the question merits an honest and specific answer—an answer based not on amounts of dollars spent for this item or for that item but rather based on missions assigned to the Army and which the Army must fulfill with maximum efficiency and minimum expense. Likewise the answer must come from consideration of normal peacetime obligations such as those the Army faced during the period 1946-1950 rather than the abnormal defense obligations which have been superimposed upon us since the beginning of fiscal year 1951. For a national emergency relieves the Army of few of its peacetime obligations. On the contrary it intensifies many of them and adds countless other important and expensive ones.

The clearest and most direct statement of what the Army has to show for its expenditures during the five year period from 1 July 1945 to 30 June 1950 is simply to measure the degree of attainment of the Army's principal missions during this period and the extent to which it has performed its statutory functions. In addition to its basic mission of providing forces for the conduct of prompt and sustained combat operations on land, the Army is required also by statute to perform certain collateral functions. Taken together these missions

and functions comprise the following twelve major tasks, the performance of which is imposed upon the Army by law:

a. Maintain forces-in-being prepared for immediate deployment in case of emergency.

b. Fulfill occupation tasks which require deployments in Japan, Germany, Austria and Trieste.

c. Maintain forces for the defense of vital installations, such as atomic energy and key industrial centers in the United States.

d. Maintain defenses of Alaska and other possessions.

e. Provide a mobilization base for expansion of the Army in case of war.

f. Strengthen the reserve components by providing them with better equipment, facilities and training.

g. Strengthen the defenses of the free world under our North Atlantic Treaty and Mutual Defense Assistance Program commitments.

h. Provide for intensive research and development and industrial mobilization.

i. Maintain a military educational system which will keep professional standards high.

j. Operate the Panama Canal and Panama Railroad.

k. Develop and improve the harbors and navigable waterways of the Nation.

l. Be prepared to assist in time of flood and disaster.

The way in which we have met these responsibilities constitutes what we have to show for the funds that have been appropriated for the use of the Army during the period under question.

To meet the first task of maintaining forces-in-being, the Army at the outbreak of the Korean situation had an actual strength of 592,000 of which a large portion were employed in occupation missions in Japan, Germany, Austria and Trieste. Other forces overseas were deployed in such widely separated places as Okinawa, the Caribbean, Hawaii and Alaska.

In all, we could show for our money an Army strategically placed in the United States and overseas composed of divisions, headquarters units, regiments, groups, combat battalions of all types and numerous company size units—combat, headquarters and special. In addition to many Table of Organization units in support of the above forces, there were 2081 separate Table of Distribution units organized to perform

required missions for which there are no formally established Tables of Organization.

The Army built up a manpower mobilization base of reserve components consisting of the Organized Reserve Corps and the National Guard totalling in number 509,617 active Reservists and 324,716 in the Guard. This organization included 27 Divisions and 20 Regimental Combat Teams of the National Guard plus the framework for 25 Reserve divisions, plus supporting units such as antiaircraft battalions, armored cavalry regiments and certain miscellaneous units.

The important current operational duties imposed by the task of occupying former enemy territory during the period since 1 July 1947 have consumed in excess of $4 billion of Army appropriations. Large additional funds were necessary, of course, to back up and support the occupation troops. The day-to-day expenses of paying, housing, feeding and supporting the Army, including these occupation forces, consumed so large a portion of the Army's appropriations that only 7 per cent of the funds could be applied to the procurement of modern weapons and equipment. For these reasons it was not possible within the limitations of a peacetime economy to reach the levels of procurement and war reserve stocks (both necessary to a mobilization base) that would ordinarily be achieved during a period not requiring extensive occupation forces.

In performing its commitments under the Mutual Defense Assistance Program, modern equipment such as light and medium tanks, bazookas, recoilless rifles, artillery (155mm gun and howitzer), radar, radios, antiaircraft artillery (90mm semi-automatic, 40mm automatic), and all types of trucks and jeeps are being shipped to countries where it is believed they will produce the greatest mutual benefit in stopping the advance of totalitarianism, in maintaining the peace or in keeping the war as far away from us and our allies as possible.

Logistically, the Army was able to provide for immediate procurement problems by filling shortages and buying essential supplies. As new types of ammunition have been developed they have been procured although in limited quantities. The Army's program of installations has been designed to concentrate its strength in major installations which were most effective for training and which provided for maximum economy in operation.

Throughout the world, the Army has maintained an attaché system with governments of other nations. In addition, advi-

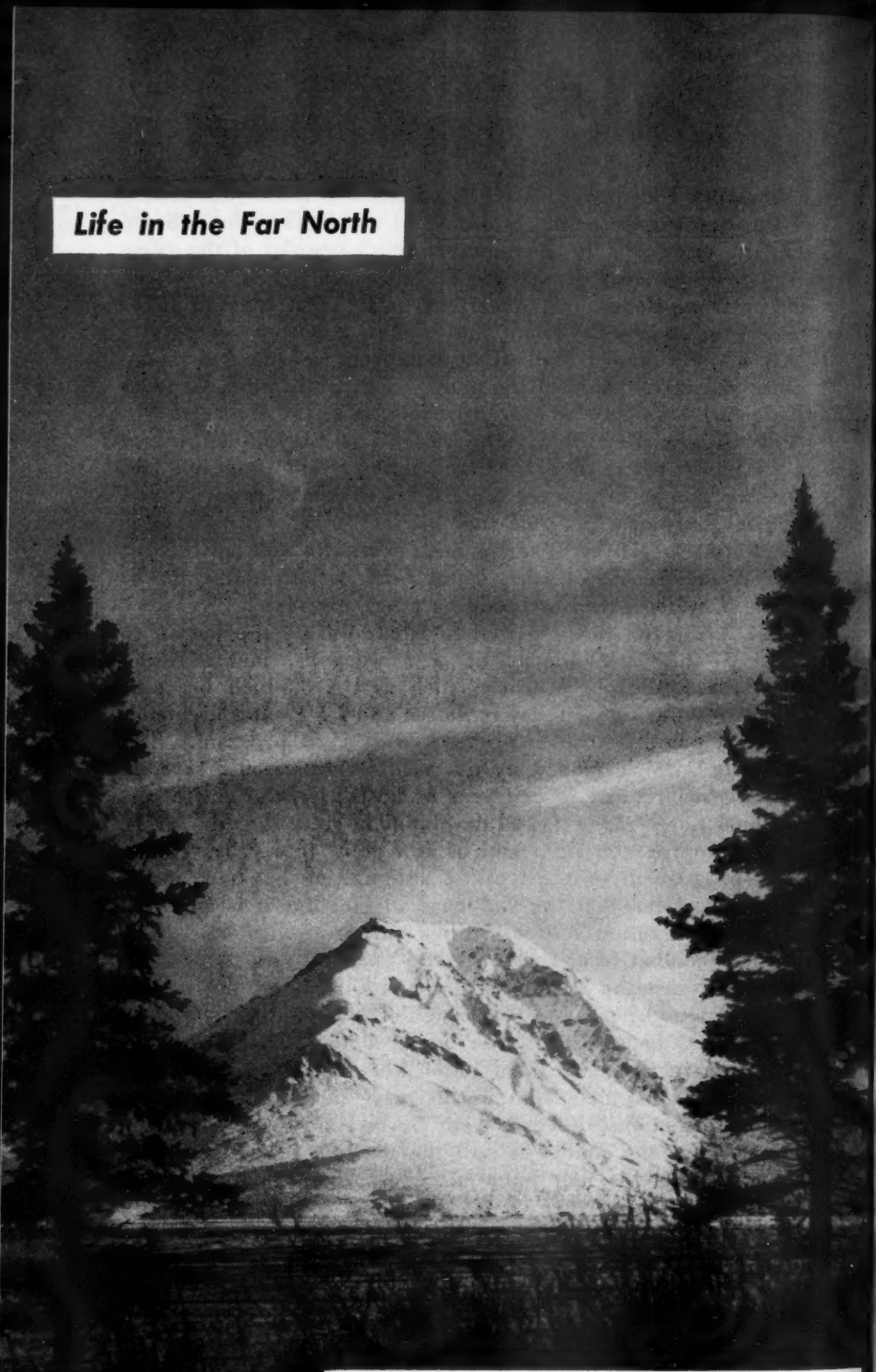
sory groups and missions were established to orient the armies of the host governments toward the United States in military thought and doctrine. Two outstanding examples of the effectiveness of advisory groups are the actual saving of the Greek nation from Communist guerrillas and the strengthening of Turkey to the point where the Iranian Advisory Group has been able to indoctrinate that nation in resistance to Communist aggression up to this point. The Philippine Advisory Group also achieved success in maintaining the *status quo* in the Philippine Republic. Army missions are being maintained in 13 Latin American nations and military aid programs and advisory groups have been established with all of the Mutual Defense Assistance Program nations.

Pensions to retired Army personnel and to veterans of our wars is another major category of funds not available to the Army in building and maintaining a fighting force.

The Army has devoted limited funds during the period to research and development of new weapons, methods and techniques. Certain of these, such as the 3.5-inch bazooka, are already paying off today in Korea and far greater dividends are anticipated in the future from this vital program. The new field wire developed by the Signal Corps would save, in cost of procurement in one year of hostilities, the entire cost of Signal Corps research and development since World War II. An outstanding new light tank is now going into procurement. Great progress in certain types of ammunition has been made.

Our Army has met the challenge so far; but it is apparent that our occupation responsibilities pin down so much of our potential combat force that the Army cannot fulfill its primary mission of meeting possible aggression threats on the ground in vital areas where we are concerned. We have always met power with dispersion on the battle fields. The pattern of aggression in Greece, China, Indo-China and Korea has been dispersed formation. That means more men on the ground, deeper formations, integrated by radio and wire communications. For the soldier is still the decisive factor in battle; when he puts his foot on a piece of ground, no more war comes from there.

Life in the Far North



Beautiful Mount McKinley is a familiar sight to military personnel stationed at Fort Richardson, Alaska.

CANADA FACES THE ARCTIC CHALLENGE

By

FLYING OFFICER E. J. HUDSON, RCAF

WITH the greater part of the world's population and industry located within the Northern Hemisphere, it is likely that any global conflict in the future must originate or be supported by some nation or combination of countries in this region. Strategic planners must reckon with the likelihood that an aggressor power bent on world domination might attempt to destroy the industrial centers in this area, particularly those comprising the industrial complex in northeastern United States and southern Canada.

How could an enemy attack these industrial centers? Would he come by sea? By land through Alaska? Or would he use that modern long-range artillery—the airplane? If the latter is the answer, the shortest route is by way of the North Pole. This realization brings into focus the vital importance of the Canadian Arctic in inter-American defense. Even if no land battles occur in this area, it is here that warning stations, fighter landing strips and emergency fields for crippled bombers will have to be established. To many, this area seems vast, bleak, forbidding; yet it is also an area of great potentialities that are only now fully appreciated.

The Arctic may be defined as that territory lying north of all points where the average summer temperature of the warmest months does not exceed 50 degrees Fahrenheit. These points may be more easily visualized as a line stretching from the upper part of Labrador on the east to Hudson's Bay and northwestward to the Mackenzie River delta. This is the general boundary recognized by the Canadian Government as describing the southern border of the Canadian Arctic. Surveys also show that the Arctic boundary generally corresponds to the limit of tree growth. The sub-Arctic comprises the

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area between this line and the permanently settled districts of Canada—roughly to the northern limits of agriculture.

This northland has been variously described. To the uninitiated it is the mysterious, frightening land of the "Frozen North." To those who know it, it is the "Friendly Arctic"—a place of peace and quiet.

The typical Arctic winter landscape is a vast sea of white with only an occasional hill or rock blown clear of snow to break the monotony. The nights are seldom wholly dark because the glittering snow reflects every ray of light from the moon and stars. Nature's own fluorescent lamps—the Northern Lights—flicker across the sky, as colorful as any floor show.

In the spring there is mud everywhere. The quiet softness of winter is replaced by the shrill calls of ducks and geese returning from the south. Grass springs up and flowers add their beauty. Inland water travel almost ceases as ice breaks up and floats downstream. Overland movement is retarded by the slush and mud and supplies have to be dropped to isolated outposts by parachute.

Then summer finally arrives accompanied by hordes of flies and mosquitoes. The sting of the winter's wind gives way to a thousand daggers of insects. Even the caribou dash madly into lakes to avoid mosquitoes and other winged pests. Here, though, is an instance where man may make out fairly well for he may protect himself with insect repellent or protective nets.

In summer, aircraft don pontoons and land on the lakes where wheels served in the winter time. Usually the snow disappears throughout the Arctic but some glaciers remain in more rugged islands such as Ellesmere where a mountain range rises to a height of 10,000 feet.

The coldest days of the Canadian Arctic are about the same as those in the state of Montana with the main difference being that the equivalent temperature of the Arctic lasts for months on end. It is this long stretch of cold that creates the permafrost—layers of sub-soil frozen the year round.

During the Arctic winter, the wind blows perpetually across the wide open spaces. While flying as a navigator with the Royal Canadian Air Force on periodic trips to Victoria Island in 1948 and 1949, members of our crew could anticipate that the meteorologist would forecast, "Wind northwest 30 miles per hour—blowing snow." This blowing snow reaches such

proportions that it is often mistaken from the ground to be an actual snow storm but the airman usually is able to see through it while in flight. The wind nags at one constantly, piercing the warmest of clothing. The airman curses for having taken up northern flying. He becomes so fatigued that a strong impulse to go to sleep—one of the symptoms of freezing—has to be overcome. His eyes weep as he faces the wind and the tears freeze on his eyelashes. The snow glasses he wears steam up and the moisture freezes the bridge of his nose. Yet, as bad as this may sound, those who pioneered the northern states of Montana and North Dakota as well as the Canadians who opened up the Prairie Provinces had just as much trouble with the cold as do the contemporary pioneers in the Arctic.

But the Eskimo who inhabits this area does not suffer from the cold. He knows how to keep warm. He dresses himself in two suits of caribou skin. His red flannels are caribou skin with the hair on the outside. To protect his head he wears a parka of caribou.

In meeting the challenge of the Arctic, the Canadian Defense authorities are mimicking the Eskimo. Researchers have developed a nylon cloth with a deep pile resembling that of a child's teddy bear. Inner and outer suits made of this material, worn in the same manner as the Eskimo wears his, have been tested under extreme temperature conditions and found satisfactory. But as yet no footwear has been found that successfully replaces the Eskimo's seal skin boots.

To get the body fuel to combat the cold, men in the Arctic have to eat foodstuffs with a high concentration of carbohydrates and fats. The Eskimo obtains these requirements by eating large quantities of blubber or seal fat.

The airplane is helping to transform the Arctic. Some of the islands have level spots suitable for the construction of airdromes. Airfields have been bulldozed out of the brush at Norman Wells and Sawmill Bay in the sub-Arctic and a gravel strip is in use at Baker Lake in the Arctic. Winter landing strips present no construction problem since it is only necessary to pack the snow on a likely looking area of ice and land on wheels. If the aircraft is equipped with skis, even this is not necessary.

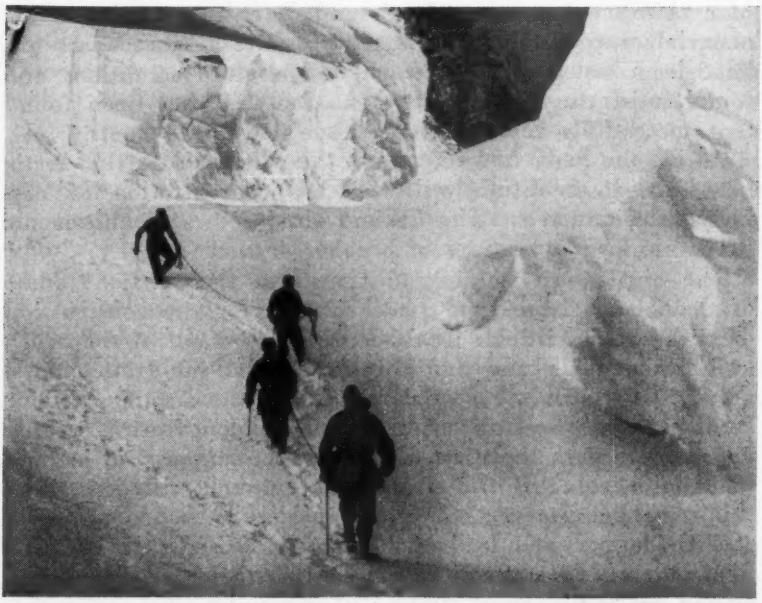
With copper and lead visible on the surface at Bathurst Peninsula, it is reasonable to assume that there are many more buried or undiscovered sources of minerals. Transportation

is all that is needed to develop these potential resources.

Further information on the northern terrain has been made available as a result of a photographic survey now nearing completion by the Royal Canadian Air Force. A similar aerial survey has been completed in Alaska by the United States Air Force. (See "Charting the Arctic," April 1950 DIGEST.) The surveys demonstrated that previous maps were in error as much as 30 miles and that two islands with a combined area of 5000 square miles were not even shown

Cold weather exercises conducted since World War II by the RCAF and the Canadian Army have tested vehicles specially designed for the Arctic. Men in the field were supplied by ski-equipped aircraft and parachute drops. This supply system did not require roads and enabled the forces to establish adequate stocks at convenient bases of operation. Such tests and more recent ones conducted jointly with United States forces are proving the efficacy of supplying units in the northern wastelands by airplane.

When all the many problems of supply and survival in the Arctic have been mastered—as surely they will be—then we shall appreciate the full import and meaning of the term, the "Friendly Arctic."



U. S. Army Photograph

Man's conquest of the elements is a first essential in Arctic operation.

SUPPLY EXPEDITION TO ALASKA

By

GERALD W. CRANDALL and EDWIN GRUBER

FAR up on the northern rim of the continent, tucked away in tiny outposts with exotic names, men of the Army, Air Force, Coast and Geodetic Survey, Civil Aeronautics Administration and Weather Bureau were depending on the tons of supplies being put aboard eight Navy ships at various ports along the California coast. These ships, making up Transport Division Eleven, were to convey supplies to the Naval Petroleum Reserve No. 4 at Point Barrow, Alaska, headquarters for a 35,000-square mile area lying within the Arctic Circle. This annual expedition also would visit outposts at Barter Island, Pitt Point, Dutch Harbor, Tigvariak Island and Point Lay.

Delivery of supplies in this area normally can be accomplished only during a few weeks in the summer time when the polar ice pack moves away from the shores of northern Alaska sufficiently to permit ships to reach the coast. Due to Arctic ice conditions, permanent-type docks and piers cannot be constructed in the Far North. Unloading must therefore be accomplished by the amphibious methods of World War II.

The Point Barrow Resupply Expedition (known as BAREX-50) was made up of eight ships—the *USS Henrico* as flagship; the attack cargo ships *Oberon, Washburn* and *Seminole;* the fleet oiler *Ashtabula;* Landing Ships Tank 1126 and 1146 and the icebreaker *Burton Island.* Included in the task element were a helicopter unit to scout ahead for ice conditions, an underwater demolition team in case of need for such activity, a beach party, a Naval Construction Battalion (Seabee) detachment and a boat unit detachment. The Seabees were responsible for operating the large self-propelled landing barges while the boat unit detachment handled the majority of the

GERALD W. CRANDALL and EDWIN GRUBER are Journalists Third Class, USN attached to Headquarters, Commander in Chief, Pacific and U.S. Pacific Fleet.

smaller landing craft. The beach party included a crew of radiomen and signalmen. Each landing craft was supplied with a two-way voice radio.

From 16 June to 25 June the various stores and equipment were loaded aboard the vessels at Point Molate, Port Hueneme, San Diego and Long Beach in California. On 25 June the officers and men of this little fleet were listening to the radio when the news of the outbreak of fighting in Korea came over the airwaves. Now all joking stopped. Facial expressions showed the thoughts and feelings of each man. Nobody appeared alarmed but all were deeply concerned, for it affected everyone directly.

We were called to General Quarters for battle drill. Gunners practiced on four navy planes "attacking" us. But meanwhile work continued on the ships to condition them for their northern cruise. Boat crews scrambled over the landing craft, chipping, painting, repairing—and perspiring. On 8 July the staff of BAREX-50 transferred to the *USS Seminole* so that the *Henrico* could be released for other service. She sailed for the Far East loaded with Marines fully prepared for battle. LST 1110 replaced the *Henrico*.

By 26 July all ships were loaded and enroute to Point Barrow. All together, the eight ships were carrying 23,883 tons of supplies—drummed oil products, lumber, provisions, 10,000 feet of drill pipe and other gear. The ships were divided into three Movement Groups. Patrols conducted by planes from the Alaskan Sea Frontier, plus the helicopter detachment aboard the *Burton Island*, kept the expedition informed of weather and ice conditions.

Gunnery practice was staged daily, bringing our gun crews to a peak as the days passed. By 1 August we were past the Unimak Pass in the Aleutian Island chain and the next day we passed Point Lisbourne. The weather remained calm; some of the bravest of the crew even took sunbaths on the fantail without their shirts. We found it rather hard to believe that we were actually above the Arctic Circle. Sunset on 2 August was at 2323 hours and sunrise followed only 2 hours and 27 minutes later. A day later we reached Point Barrow.

For the unloading operations at Point Barrow, the beach was divided into six areas, each to accommodate a different class of cargo—one for lumber, construction materials, food, commissary items and clothing; another for general supplies; another for heavy duty spare parts and equipment and so on.

One area was designated as an emergency beach to be used as an anchorage in case the ice pack should return before the unloading was completed. Fortunately this was not needed.

As soon as the beach party was ashore, the cargo nets went down into the waiting jaws of an amphibious vessel and men scrambled aboard. The beachmaster made ready, the ships moved into their positions and the unloading began. The traffic flow was unsteady at first but soon the boat crews and cargo-handling crews worked into a rhythm. Fog rolled in to hamper the operation but with the boat crews following directions carefully and heeding the fog-horn on the beach, unloading soon was smoothly accomplished.

At one time a landing craft, its radio balky, lost its bearings in the fog and headed directly for Siberia. But when the fog lifted a rescue vessel roared out to catch up with the wanderers and returned them safely.

As swiftly as cargoes were landed, construction workers kept the beaches cleared by removing the supplies from the forward areas. All hands worked around the clock on 12-hour shifts. Hot food was available at all hours. The *Ashtabula,* loaded with 4047 barrels of Arctic Diesel oil, had preceded us into Point Barrow and discharged its cargo by using the LST 1126 as a shuttle tanker. The LST made six trips and completed the unloading in a little over 26 hours. By 7 August our own unloading was completed despite short delays for minor repairs and adjustments to booms and rigging.

While we were unloading at Point Barrow with the main portion of our fleet, the LST 1146 had proceeded to Point Lay. There strong northeasterly winds caused an abnormally low tide which made unloading difficult. Even so the unloading time was only 35 minutes. The LST 1146 proceeded to Barter Island and then to Tigvariak Island where again strong winds caused some difficulties. There all cargo had to be discharged from the lee side of the amphibious boats and only one crane could be used. The LST 1146 completed its job at Pitt Point and returned to Point Barrow.

By 7 August the mission of BAREX-50 was completed. The unloading had been carried out in accordance with the plan laid down in the operation orders. With larders stocked and all necessary equipment and supplies safely delivered, outposts in the Point Barrow area were snugly set to endure another Arctic winter.

MAINTAINING AN ALASKAN OUTPOST

By

COLONEL WARREN S. SHELOR

EXTREME cold, high mountains, glaciers, the barren lands and muskegs of the Far North—all of these pose a multitude of problems for military operations. Just maintaining life, let alone operating under these extremes, is often a problem. But the United States Army is learning how to meet and overcome these challenges at its Arctic Training Center in Alaska.

Located less than 200 miles from the Arctic Circle near the junction of the famed Alcan Highway and the old Richardson Highway, the Center lies in the Tanana River Valley 105 miles southeast of Fairbanks. Formerly known as Big Delta, this site combines the rigorous winter conditions of the Arctic interior with the greatest variety of terrain—from wind-swept barrens to glacier-packed slopes—to be found in a similar area anywhere in Alaska. The garrison area and the airfield, one of the finest in Alaska with a four-directional runway, cover 1200 acres within a military reservation of nearly 15,000 acres.

The Army Arctic Indoctrination School was established here in November 1948. About 140 officers and men, largely volunteers from the 23d Infantry Regiment, made up the staff of instructors of the operating units. The post was redesignated as the Army Arctic Training Center on 1 July 1949 with the Headquarters and Headquarters Company of the Army Arctic Training Center and the Army Arctic Indoctrination School set up as separate units. The main body of the Arctic Test Branch of Army Field Forces arrived in July 1949 and the post was greatly enlarged physically.

The combination of weather extremes, temporary buildings and isolation poses a number of challenges that are being met. One of the greatest obstacles encountered is the wind—cruel, cutting blasts that sweep in relentlessly. Here in the Far North, wind chill often causes room temperatures to drop

COLONEL WARREN S. SHELOR, Infantry, was Commanding Officer, Army Arctic Training Center, Big Delta, Alaska. He is currently on duty at Fort Ord, California.

from a comfortable 65° Fahrenheit to far below freezing in half an hour. The proper construction of housing thus becomes a problem of prime importance. It is a complicated problem too because good weather for outside construction is limited to less than half of the year. Excavating eight to ten feet of frozen ground is slow, difficult and expensive because the ground is frozen to a depth of 900 feet more or less. It may take two days to dig a hole for a power-line pole even though steam is used continuously to thaw the ground.

Most of the buildings are set on wooden stilts above the bare ground; but the annual frost raises props under the outer walls of the buildings while the center supports remain stationary. In spring the reverse occurs. This racking, plus the drying out of building material due to interior heating, causes doors and windows to warp and bind, adding to the normal maintenance problems.

Food preservation presents a paradox, particularly when contrasted with procedures in temperate zones. Many food items must be kept warm, whereas at the same time of year in the States they would have to be refrigerated! Sometimes, in fact, both heating and refrigeration units have to be kept going—heat to protect vegetables and eggs, refrigeration to keep meats, milk and butter frozen.

Transportation difficulties pose another challenge. Shipping time in ordinary climates can be forecast with reasonable certainty but much more time must be allowed for delays in delivery to the Far North. Requirements must be determined and requisitions forwarded five to six months in advance.

Vehicle maintenance and operation are special problems. In temperate zones a little water in motor fuel may be just a nuisance. In a frigid region, however, the same small quantity of water freezes so quickly that it can immobilize a vehicle. Storage batteries become temperamental and some wet batteries have only about 50 per cent capacity at —20° Fahrenheit. Present model heaters and engine warmers have been found satisfactory in principle; the problem now is one of engineering.

With temperatures normally below the zero mark, most driver maintenance must of necessity be limited to visual inspections. Metal, plastic and rubber parts become brittle with a consequent increase in their mortality. Electrical connections which work perfectly at the freezing mark often fail at —15° to —20° Fahrenheit. Brake lining shatters because the rivets are loosened and connecting links break quickly.

In establishing a motor pool in the Far North allowances must be made for cold weather factors. Only the minimum of vehicles essential to the needs of the post should be employed; adequate heated shelter must be provided for maintenance operations; a sufficient number of mechanics should be assigned, with one man per five vehicles considered desirable; more frequent inspections are called for; and normal levels of supply must be nearly doubled in some cases.

Not only are there transportation difficulties; communications, too, are hampered. The cold works strange tricks sometimes. Constant freezing and thawing causes rubber cable to deteriorate rapidly. A cable which in a temperate climate will last up to 25 years has a life span of about five years in the northland. During the winter permanent splices prove impossible. The brittleness of the rubber sheath and of the wire itself necessitates extreme care in handling. Field wire splices must be made in the cab of a heated vehicle or in a tent warmed by a Nelson heater not only because cold tape loses its adhesive quality but because this procedure also cuts down the likelihood of frostbitten fingers. Since linemen's gaffs tend to become brittle and break off, placing spiked steps on all poles was found to be expedient. But Arctic footgear is designed to fit the foot loosely and climbing spiked poles is therefore difficult. Higher, better-fitting boots that allow the wearing of additional socks is one solution.

Dry battery powered radios must be kept warm to prevent batteries from freezing. Similar protection must be given the telephone and radio microphones since the moisture of the breath will freeze and render the operating button immobile. The northern lights, which may be beautiful displays of nature in the States, are an impediment in the Arctic because the resulting static makes low-powered radios impracticable. Mineral deposits also cause loss of power and range, so that only high-powered sets are practicable.

These are some of the problems that the Army Arctic Training Center has met and solved—or is working to solve. Already during its brief existence the Big Delta installation has contributed substantially to the Army's knowledge of Arctic ways. The personnel there have learned that the Arctic is rigorous, challenging and at times exasperating. They have learned too that while the Arctic must always be respected, it need not necessarily be feared. Common sense, experience and ingenuity will go far in overcoming the obstacles which nature interposes.

Guard Divisions Ordered Into Active Military Service

Coinciding with the President's proclamation of a state of national emergency, two additional National Guard divisions have been ordered into the active military service, joining their comrades of the 28th, 40th, 43rd and 45th Infantry Divisions already in training.

The 31st Infantry Division, known as the Dixie Division, with units dating back to 1798, saw service in both World Wars. The Division was organized initially in 1917 at Camp Wheeler, Georgia, out of National Guard units from Alabama, Florida and Georgia, and moved to France in 1918.

DIXIE DIVISION

In 1923 the 31st was reorganized with units from Alabama, Mississippi, Florida and Louisiana. During World War II the Division served in the Southwest Pacific, undergoing its baptism of fire in New Guinea as part of the Sixth Army. Action followed for some units in the Aitape area and Maffin Bay. The Division as a whole then moved to Morotai where for seven months it held the perimeter defense for the Thirteenth Air Force. The Division's bloodiest battle took place on Mindanao where, in seven days of close fighting, the Japanese forces were split asunder. Following World War II the Division was allotted to Alabama and Mississippi and its first units were Federally recognized in November 1946. The 31st will train at Fort Jackson, South Carolina. Major General Alexander G. Paxton is commanding general.

The 47th Infantry Division, composed of men from Minnsota and North Dakota, is a newly organized division, but its units all have proud military histories. Two of its three Infantry Regiments, one of which traces back to the famed First Minnesota of the Civil War, saw action with the 34th and the Americal Divisions in World War II. The Division Artillery includes one battalion stemming from the old 151st Field Artillery Regiment which served in World War I with the 42d Division and with the 34th Infantry Division in World War II. The original 151st can be traced to the Civil War. Another Field Artillery Battalion was, in World War II, the 3rd Battalion, 135th Infantry. The third Field Artillery Battalion was formed by consolidating two former antiaircraft battalions which in turn had come down from the 205th Infantry. The new Division is known as the "Viking" because of its distinctive shoulder patch, reminiscent of Thor's war helmet and denoting the Scandinavian ancestry of many of its members. The Division will train at Camp Rucker, Alabama. Major General Norman E. Hendrickson is commanding general.

VIKING DIVISION

THE ARMY ALMANAC--HANDBOOK TO HISTORY

THE shooting phase of World War II had ceased but so far as military information specialists were concerned, the heavy bombardment of questions concerning things military continued unabated. The need for an authoritative compendium of facts and figures on military matters was real and apparent. With the national defense assuming an increasingly important role in the postwar world, the demand for information about the Army—by the press, the public and the sister services—pointed up the need for a handbook that would summarize Army activities since the founding of the Republic.

In 1946 the Armed Forces Information School, then the Army Information School, undertook the preparation of an information handbook which would serve as a basic reference for both civilian and military information specialists. It took two years to compile the needed data and another two years to prepare *The Army Almanac* for publication. The research for the volume was conducted in Washington, D. C., but the editing and processing was done at the Armed Forces Information School, Carlisle Barracks, Pennsylvania.

The resulting publication, released this month by the Government Printing Office, contains over one thousand pages of facts and figures concerning, directly or indirectly, things military. The number of subjects which it treats would total in the thousands, from the characteristics of weapons to the pay of the Army and from the Revoluntionary War to the beginnings of unification of the services. Histories of all Army divisions and a listing of battle honors awarded units in World War II are included in the volume. The Air Force and the Navy are described in order to afford a complete insight into the Army's defense role.

Toward an understanding of the size, scope, mission, organization, evolution and accomplishments of the Army, *The Army Almanac* should prove invaluable not alone to historians, researchers and military analysts. Civilians and military readers, too, may glean here an appreciation of the magnitude of the Army's tasks.

To compile an official Department of the Army volume of such breadth of scope demanded the cooperation of dozens of agencies and hundreds of individuals. Where secondary sources were not used, several methods for obtaining data were employed. Interviews with specialists and key administrators provided much valuable information. Questionnaires and outlines were submitted to certain offices for completion. In many instances *Almanac* researchers were given access to the official records and this permitted the gathering of data first-hand. Frequently, the National Archives and the Army Library were called upon for assistance.

Reviewing the whole work for security and policy clearance was a time-consuming and tedious job. But reviewing the work for uniformity and authenticity of statistics was an even greater task. The Army Comptroller, official clearing agency for statistics pertaining to the Department of the Army, worked for a year checking, correcting, revising, adding and deleting *Almanac* materials. Frequently the Historical Division of the Special Staff (now the Office of the Chief of Military History) was called upon to supply or review data.

The Army Almanac is divided into six parts and many chapters. The parts include: Associate Security Agencies, The Three Defense Departments, Elements of the Army, Wars and Campaigns, Administration, and Miscellaneous. The latter heading includes such subjects as Selective Service, Veterans Administration, The Army's Generals, and The Pentagon. Tables, charts and chronologies accompany the narrative for brevity and clarity of presentation. The text is written in non-technical language. Tables of content preface each chapter and a subject index permits rapid reference to the materials.

Distribution of *The Army Almanac* will be pointed toward representatives of news media, interested civilian agencies and to military offices, installations and personnel which are in the best positions to disseminate information concerning the Army to interested civilians. Included in the special distribution will be Army posts, camps and stations; armies, corps and divisions; recruiting offices; senior National Guard instructors in each state; senior ROTC units; each Organized Reserve Corps state headquarters; Government depositories and major college libraries. The Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., will have copies available for sale to individuals at $3 a copy.

Soviet parachutists—like these in formation for a move—jump into action each loaded with two parachutes and approximately 60 pounds of combat equipment. On the ground, they strip to essential items to facilitate movement.

imately 60 pounds of combat equipment. On the ground, they strip to essential items to facilitate movement.

THE SOVIET MILITARY ORGANIZATION

V—Mobility of the Soviet Soldier

UNBURDENED by luxury items and carrying minimum rations and the bare essentials of equipment, the Soviet soldier marched more campaign miles than any of his allies during World War II. While the Soviet infantryman generally trains with a heavy pack—sometimes weighing as much as 70 pounds—in combat the burden of his clothing and equipment is considerably lighter.

He can move easily because his field uniform fits loosely and his rifle, the M1944 carbine, is light.* Crawling and creeping are likewise made easier because of the fullness of his clothing and the total lightness and distribution of his equipment. The Soviet soldier's combat gear is as simple and practical as his dress uniform is smart and colorful. From the standpoint of individual mobility, comfort and practicality, the present-day Soviet infantryman is far better outfitted than Russian foot soldiers of the past.

In 1938 the individual equipment of Soviet troops was redesigned. When the German armies attacked in 1941 the Soviet equipment program was still in the early stages of procurement. Normally boots are worn by the Soviet infantryman because the poor roads of his country are often knee-deep in mud, and theoretically every Soviet Army soldier should have been provided with leather boots and the standard field pack. The circumstances of war, however, forced improvisations and substitutes upon the fighting man.

Mentally and physically the Soviet soldier was never spoiled by the luxury of ample motor transport. His reliance on machines was inconsequential. Not only did the soldier march on foot most of the time but he also demonstrated greater ability than the German in traversing difficult terrain. In the

*The Soviet M1944 carbine, a short-barrelled rifle with a folding bayonet, is gradually replacing the old M1891/30 rifle.

swamps of Byelorussia the Soviet soldiers—labeled "swamp rats" by Hitler—fastened boards to their feet to maintain footing while building corduroy roads.

In the broad expanses of the plains which comprise so much of the USSR, the Soviet Army man had little use for tents which were so easily discernible in any season and which failed to provide the warm shelter required in winter. Shelter halves therefore were not carried in World War II. Instead rain capes or ponchos designed to fit together to form a tent covering were issued. With a genius for improvisation engendered by his hard existence, the soldier improved his various shelters by using locally available materials.

Even in the burning heat of summer he kept his long-skirted overcoat with him. Serving as coat and blanket, it was the most valuable article of his equipment next to his rifle and canteen. So marked was this habit of carrying the overcoat in summer that the Germans found it of great assistance in distinguishing enemy soldiers from their own at long range.

Due to the breakdown of the equipment procurement program in World War II, the grenade pouch, the rations pouch and suspenders for the uniform belt were not issued in quantity. Many Soviet soldiers carried grenades in their pockets or hung them on their belts. As an expedient to compensate for the lack of pouches and suspenders the Army issued a drawstring rucksack for carrying rations, mess kit, rain cape and other accessories. A variety of combinations of individual equipment resulted and, while not originally intended, some Soviet soldiers carried rucksacks in summer combat. Generally, however, these were used in winter.

During World War II Soviet infantrymen were armed mainly with the unhandily long M1891/30 rifle and bayonet which is about a pound heavier than the M1944 carbine now in use. For quick, automatic fire power, ease of carrying and availability, the 7.98 pound submachine gun* favors infantry efficiency and mobility. Soviet troops did not like the United States submachine guns they received via lend-lease. They complained that the weapon was much too heavy, that the sling strap would not permit carrying the gun across the chest in the manner to which they were accustomed.

Like all combat soldiers, the Russian infantryman learned to separate the necessary from the unnecessary. The light or com-

* The 7.62mm Model PPS-1943 submachine gun fully loaded.

bat equipment—because of its simplicity and its more ready availability for procurement and issue—was the equipment of the majority of Soviet soldiers in World War II. In the summer, combat gear weights the infantryman with a total of about 55 pounds; in winter about 65 pounds.

On his uniform belt the soldier carries 70 rounds of ammunition, two hand grenades, a filled canteen, first-aid packet, entrenching tool, rations pouch, mess kit and cup. This places a total of about 15 pounds on the man's belt, including the pouches filled with grenades and ammunition. The overcoat is slung in a horseshoe roll over the shoulder and the rain cape may or may not be added to this. With this load he carries a total of about 45 pounds. Normally he also carries rations, tobacco and toilet articles plus extra clothing. These bring the grand total up to 55 pounds. The extra clothing is not always carried, however, and the rations may consist of only a piece of bread.

Despite its annoying shoulder straps, the crude but practical rucksack is still in use. In winter it is a normal part of the soldier's equipment. A loose fitting white cape is issued if the soldier is operating in snow-covered regions and those so outfitted are required to turn in their rain capes. Foot gear takes the form of fur felt boots *(valenki)* in the dry sub-zero zones.

In training the combat pack may be worn on long marches; normally, however, the full or field pack is prescribed for all training exercises in summer or winter. The Soviet, like soldiers of other nations, is still burdened with the gas mask.

In the Russo-Japanese war of 1905 the marching capability of the Russian infantryman was impeded by the bulk and weight of his equipment which included a minimum of 120 rounds of rifle ammunition. This number of rounds per soldier remained standard until about the middle of World War II when it was reduced to only 70. One hundred rounds is the unit of fire for the rifle or carbine; 300 rounds for the submachine gun. The rifleman carries 70 of these rounds with him while the remaining 30 rounds are left on the battalion and regimental trains. The Soviet soldier today may sometimes carry 90 to 120 rounds of rifle ammunition with the field pack but this is not the standard procedure.

The Soviet paratrooper jumps heavy and fights light. The average Russian paratrooper jumps with a 60-pound combat load exclusive of his parachutes. Those lightest equipped are officers and senior noncommissioned officers who jump with

The Soviet soldier goes into action with only the equipment necessary to sustain him under battle conditions.

about 53 pounds. Light machine gunners carrying 65 pounds are the heaviest equipped of any individual trooper. Wearing a jump suit over the usual Army uniform, the paratrooper carries this equipment into combat:

Carbine
200 rounds of ammunition
2 hand grenades with pouches
1 mortar shell (50mm)
400 grams of explosive
Mess kit and canteen
Entrenching tool
Weapon cleaning set
First-aid packet
Anti-gas set and mask
Signal lamp
Signal panels
Haversack
Rain cape
Compass
Knife
Rations

The infantryman trains with a combat load heavier than he carries in battle. Individual clothing and equipment are simple and well adapted to the needs of the soldier whose mobility is not usually impaired by an overstuffed pack. Abandonment of equipment is not a combat characteristic of the Soviet fighting man. On the contrary, he more often seeks to supplement his own meager supply with scavenged bits of equipment.

The marching capacity of the Soviet soldier is enhanced by his generally good physical condition and stamina and the common sense design of his equipment which stresses looseness and comfort in clothing and lightness and practicality in equipment.

In World War II, the mobility of the Soviet soldier lay not alone in his ability to cross difficult terrain but in his ability to move forward against heavy fire amid his own staggering losses.

VI—Soviet Partisan Warfare

UNDERGROUND resistance by Soviet armed partisans during World War II was so closely coordinated with the operations of the regular armed forces that it was virtually an integral part of Soviet planning and operations. The partisans had two principal missions: to harass the enemy and to procure information on the enemy forces.

Guerrilla warfare waged by irregular forces is nothing new either in Russia or elsewhere. It was practiced in Russia as long ago as the invasion of that country by Napoleon's armies in 1812. Irregulars also had figured prominently in both the American Revolution and the Civil War. More recently the Russian Civil War from 1918 to 1921 had been essentially a series of guerrilla campaigns. Other examples from history illustrate the fact that when skillfully directed and employed in conjunction with regular forces, underground units may present a serious menace to opposing armies.

Russian partisan groups on the eastern front in World War II were at first isolated bands of relatively minor strength which operated in the rear of German forces. Remnants of overrun Red Army units, local Communist Party functionaries and a miscellaneous collection of other persons gathered to harass the German invaders. As the German army drove deeper into Soviet territory, these bands were forged into closely knit organizations. Trained underground leaders and technicians were dropped behind German lines to tighten and direct the control of their activities. A unified command of all underground units was established in Moscow under the personal direction of Generalissimo Stalin and partisan operations became progressively more extensive and important.

This secondary or "shadow army" assisted in the war effort primarily by mining main thoroughfares, demolishing railroads, disrupting communications, mining railroad beds, delivering small arms and mortar fire on trains and supply transport, looting derailed railroad cars, waylaying truck convoys and troop columns and burning ration, ammunition and fuel depots. Less frequently raids on command posts of higher enemy staffs also were carried out. Such tactics undermined German morale and made efficient operations practically impossible.

One of the basic principles of all partisan tactics is to avoid open battle whenever possible. Soviet partisans seldom functioned near the battle front except in areas where extensive

pathless forests provided favorable approaches. Generally they moved in wooded and swampy terrain near highways and railroad lines, avoiding open territory and regions occupied by enemy troops yet keeping the latter always under close scrutiny. When large-scale enemy breakthroughs or withdrawals took place, there was frequent cooperation between strong partisan groups and Red Army troops.

So intense was the harassment of the Germans by partisans that at the peak of the war several infantry and panzer divisions had to be diverted from the fighting front to cope with them. War plants had to be moved back to Germany to escape the wrath of the irregular forces. In 1944 guerrillas with the assistance of infiltrated Soviet troops conducted operations of such scope in the swampy country of eastern Estonia that the left flank of the German northern front had to be withdrawn to form a shorter and more easily guarded line. Before major Soviet offensives, strong guerrilla forces would often infiltrate into the areas that the Soviets intended to take. These movements, however, sometimes had the saving feature of forewarning the Germans of Russian intentions. As an example, the Germans anticipated the Soviet attack of July 1944 in East Galicia because beforehand numerous partisan units worked their way into the wooded Carpathian Mountains southwest of Lvov, the Red Army objective.

During Russian withdrawals and after battles of encirclement innumerable Soviet soldiers, cut off from their own forces, and sometimes entire combat units, would slip through the lines to join and fight with the guerrillas. Such operations naturally posed a serious threat to the Germans.

The winters of World War II found strong armed civilian groups extremely active in the vast snow-covered wooded areas of the eastern front. They were organized along military lines, highly trained, bound by a strict disciplinary code and directed by specially trained leaders. Even a partisan's handbook was prepared and given wide distribution among the civilian populace taking part in this type of warfare.

These bands normally were organized into main groups or "brigades" comprising from 3000 to 5000 men. Soviet women also were assigned special roles within the organization. As long as the front was static, a group would remain in the same location. They were quartered in well-protected camps hidden from the enemy and constructed in such a manner as to provide adequate shelter from the elements. Each main group was

made up of a number of smaller units of varying strengths—often around a hundred men. Units shifted their positions as necessary, making it even more difficult to detect their location in the large rear areas occupied only lightly by enemy troops.

The camps of larger partisan groups were secured on all sides, sometimes to a depth of several hundred yards, by thick underbrush, briar obstacles, felled trees and wire entanglements. All routes leading to the camps were blockaded or camouflaged and traffic followed paths known only to the initiated. Often the camps were protected by bodies of water with crossings built beneath the water's surface or by large stretches of swamp which could be crossed only on swamp skis. Movement of strangers was carefully watched by sentries stationed far from the camp and disguised as peasants. A network of agents also kept under surveillance all unknown persons in the neighboring villages.

Guerrilla strongholds were normally well supplied with weapons, ammunition, explosives and rations. Only the most reliable members would be placed in charge of these supplies. Food was obtained by forced requisition upon nearby villages; those villages refusing contributions were ruthlessly burned, the male inhabitants dragged into the woods and the women and children dispersed. Aircraft were used to drop supplies in the vicinity of the camps in accordance with prearranged signals. Raids on enemy supply trains and stores helped to augment the stock of ammunition and small arms.

Excellent camouflage prevented detection of the camps from the air. Shelters were heated only at night so that during the day no smoke disclosed their location. Attention was drawn away from the hiding places through the appearance of small bands in remote villages and by the circulation of false rumors concerning partisan movements. The mere suspicion of betrayal by any individual was sufficient cause for his execution. The same fate often threatened the family of the condemned person. Collaborators were marked for liquidation. Such stringent measures partly explain the success of the secrecy of all partisan operations. Those who joined a guerrilla group, whether voluntarily or not, left it only at the risk of their lives.

The partisans were well supplied with signal equipment and larger units received their instructions by short-wave radio. Also through the use of air couriers—brought in by parachute or by airplane landings at carefully concealed air strips—they were continually informed of developments in their sectors.

Almost without exception partisan operations were conducted under cover of darkness. Daytime raids, when made at all, were carried out in sectors not occupied by German troops. Such attacks would be directed against individual vehicles carrying men or supplies.

One example of the methods employed by Soviet guerrillas against the Germans is illustrated in the destruction of a bridge guarded by enemy sentries. On this occasion a column of women and children moved along the railroad line in the direction of the bridge. Presuming them to be refugees, the guards permitted them to approach. As the head of the column reached the bridge, heavy machinegun fire suddenly opened on the Germans from the rear of the column. Under cover of this fire and using the women and children as shields, the partisans installed heavy demolition charges and destroyed the bridge.

Unusual developments at the front would result immediately in lively guerrilla activity behind enemy lines aimed primarily at the disruption and destruction of German supply routes. At the height of one of the major German attacks, a rail line being used to bring up supplies and replacements for three German armies was blasted by partisans at two thousand points in a single night. Traffic was disrupted so effectively that it was halted completely for several days.

The results of Soviet partisan operations were so effective that considerable credit is given this Russian "hidden army" for the victory on the eastern front in World War II.

But in a future war Soviet partisan activities, hitherto most effective within the Soviet Union itself, will hardly be confined to the USSR. Organized Communists outside of Russia undoubtedly will be called upon to wage subversive warfare against Soviet enemies whenever and wherever the opportunities present themselves.

These articles are the fifth and sixth of a series on "The Soviet Military Organization." The next and final article will describe the structure of the Soviet high command.

INDIVIDUAL ACTION
AIR BURST OF ATOMIC BOMB

BEFORE BURST

If Air Raid Alert or General Quarters is sounded, TAKE PRESCRIBED ACTION. The best defense against an "A" bomb is the same as against high explosive (HE) bombs.

DURING AND AFTER BURST

	1. Take cover, unless under other attack, and stay for 10 seconds after explosion or until heavy debris has stopped falling.	Underground shelters, ships, basements and slit trenches give good protection. Lie close to wall out of line from possible flying debris. Keep head covered and avoid exposure of bare skin. Never stand in open. Fall flat if no protection is available.
IF AT DUTY STATION	2. RESUME DUTIES, if able	The war won't be over. Get back to work and be ready for orders and instructions (usually General Quarters or Air Raid Alert instructions).
IF NOT AT DUTY STATION	3. HELP OTHERS	Thousands of lives can be saved by prompt aid. Help save lives by helping others. By the time the debris has stopped falling, there is no radiation hazard.
	4. REPORT TO DUTY STATION	Organization is necessary to reduce the effects of the bomb. Report to receive treatment if necessary, and to work to help overall situation.
	5. DON'T PANIC and DON'T SPREAD RUMORS	Rushing aimlessly about will hinder rescue and damage control. Keep your experience to yourself and don't enlarge on what you hear from others.

REMEMBER—THE LARGE CASUALTIES IN JAPAN RESULTED FROM FAILURE TO PROVIDE AIR RAID WARNING AND FROM LACK OF ORGANIZATION

EFFECTS
AIR BURST * OF ATOMIC BOMB

BLAST	SUDDEN SHOCK	Shock pressure from burst not enough to kill. Flying debris causes almost all injuries.
HEAT	1. "FLASH" HEAT (first few seconds)	Burns on exposed skin occur out to two miles. Light-colored clothes or any shielding substance afford protection. Keep your shirt on.
	2. FIRES	Flash heat starts forest and brush fires. Many fires started by stoves, short-circuits, etc. Broken power lines on ships start electrical fires. (Fight these fires in normal manner.)
NUCLEAR RADIATION	1. "FLASH" RADIATION	50% of radiation occurs in the first second. 80% in first 10 seconds, all in first 90 seconds. Fall or dive fast to place as much material as possible between you and blast. In most cases if you are not wounded or burned, you need not worry about radiation.
	2. LINGERING RADIATION (from deposited bomb material)	So small it is not a hazard. Disregard it.

* Bombs will probably be exploded high in the air. Surface or sub-surface bursts may reduce blast and heat effects and increase lingering radiation. (This is serious but can be handled by proper care. Most ships or vehicles can avoid by maneuvering).

To facilitate the widest possible dissemination of information on defense measures to be taken in event of atomic attack, The DIGEST this month interrupts its cover series to present this handy guide prepared by the Department of Defense. Pocket-size reprints are obtainable from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. at 50 cents per 100 copies. The cover series of Army Landmarks will be resumed with the March issue.